Cancer Forum

November 2005
Volume 29 Number 3
ISSN 0311-306X

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Innovations in cancer imaging

Overview

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The burgeoning development of new computer applications and increased funding from venture capitalists has lead to an explosion of new innovations in radiology and interventional radiology.

The articles in this edition of Cancer Forum cover many of the new developments. Importantly, in terms of breadth of new developments this volume is 'barely scraping the surface' so to speak.

Radiology and especially interventional radiology continues to expand its role in diagnosis and follow-up in cancer patients. Minimally invasive image-guided therapies have developed increasing importance as a modality of treatment.

Annually in Australia, about 80,000 people are diagnosed with an aggressive form of cancer. We know that the incidence of cancer is increasing and this generates more responsibility and an increased workload for both diagnostic and interventional radiologists.

We have assembled an expert panel of radiologists to discuss the evolution, and in some instances, revolution, in cancer imaging.

Rathan Subramaniam and Murali Guduguntla highlight the role played by the higher field strength MRI scanners and discusses in depth their application in various oncological scenarios.

It is of little use having sophisticated CT and MRI scanners for diagnosis and management of chemotherapy patients if it is difficult to administer the chemotherapeutic agents effectively. With an ever increasing workload and longer waiting lists, our surgical colleagues have found it increasingly difficult to place venous access devices. Additionally, this takes no account of other logistical problems such as hospital bed shortages. Therefore insertion of venous access devices, especially chest and brachial ports have become a procedure performed by the interventional radiologist. It neither requires hospital admission nor general anaesthesia. Stuart Lyons' article reviews the management of the ports and explains why they malfunction. He has included an extensive list of references in his bibliography.

The management of pain, once entirely the domain of a pain or anaesthetic specialist has also become part of the daily workload of the interventional radiologist. Clearly, the interventional radiologist is now a member of the multi-disciplinary oncological team. Glen Schlaphoff describes 'cementoplasty' which is a procedure used for treating bone pain in patients with metastatic bone disease. Not only does cementoplasty stabilise and strengthen the weakened bone, in some instances it will immediately alleviate pain because the heat of the bone cement can destroy the sensory fibres.

Palliative care has advanced considerably and performs an admirable task in caring for the terminally ill patient. But obviously there is ongoing demand for novel cancer therapies, many of which will be developed by other members of the multi-disciplinary team. Your editor has contributed an article to this edition of Cancer Forum, detailing how the interventional radiologist can assist in bettering the quality of life of the terminally ill patient with intractable ascites. The paper describes the image-guided placement of peritoneal ports in the radiology department. This allows the palliative care nursing team to aspirate the ascites with the patient at home; obviating the need for frequent visits to the radiological department for paracentesis.

The papers presented may seem esoteric to some clinicians and radiologists who have become comfortable with the concept that radiology is purely a diagnostic tool. This truism is no longer valid. This edition of Cancer Forum dispels that and shows the road ahead – radiology offering diagnostic and therapeutic services.

It is hoped that the articles provide two benefits for the reader. Firstly, to reflect upon and admire the speed and breadth of development within diagnostic and interventional radiology. But probably more importantly, to act as a springboard for curious minds such that they might follow the lead and contribute to improving the management of cancer.

Vascular access devices and the oncology patient

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Abstract

Oncology patients are frequently faced with difficult venous access requirements. Access is required for chemotherapy and frequent blood testing, which rapidly consumes peripheral access, often on and off for prolonged periods. Long-term venous access devices have the potential of minimising the quality of life implications for such patients whilst preserving peripheral veins.

Venous access devices, including implantable catheters (ports), tunnelled catheters and peripherally inserted central catheter (PICC) lines, all have relative advantages and disadvantages. Choice of device will often revolve around both patient factors and local preference. Image guided placement is the preferred method of insertion in most institutions due to its higher success rates and lower morbidity and mortality. Secondly, such physicians are usually well suited to address many of the catheter complications and place alternate access catheters in the compromised venous patient.

Vascular access is a common problem facing oncology patients. Access is required not only for dose intensive chemotherapy, but also for frequent blood sampling and intravenous supportive measures. Vascular access devices provide reliable venous access and may protect peripheral access and increase patient comfort through reducing repeated and difficult venipuncture.

The perfect catheter should be placed in a large vein allowing rapid dilution of infused products, free aspiration of blood and reduced pain on injection. This catheter should also be biocompatible, whilst minimising catheter related infection, thrombosis, stenosis or occlusion of access site. There are numerous types of catheters available for this purpose and selection is dependent upon type and duration of access, patient factors, physician and local factors.

Venous access, however, is not without complication. Although insertion and placement problems are rare with modern access and imaging techniques, catheter related infection, thrombosis and loss of function continue to be major problems. The oncology patient is also often immunosupressed, prone to febrile periods and is often thrombogenic from the underlying disease.

Venous access devices

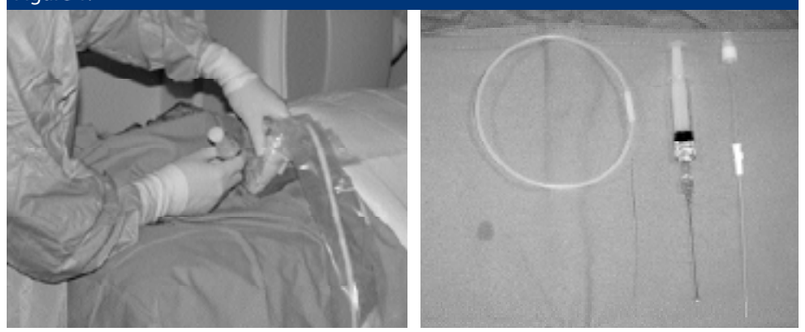
Venous access devices can be divided into implantable devices, tunnelled catheters and peripherally inserted central catheter (PICC) lines.

Placement is similar for all devices; the chosen vein is entered either percutaneously using the Seldinger technique or surgically cut down. The catheter tip is ideally placed either into the right atrium or the cavo-atrial junction. Catheter tips that end in the SVC or brachiocephalic vein have a higher incidence of catheter failure due to fibrin sheaths, venous stenosis and thrombosis. PICC lines are fastened to the skin at their exit site. Tunnelled catheters are passed subcutaneously for a variable distance before exiting the skin. Ports are buried subcutaneously (not exiting the skin) after being tunnelled for a short distance.

Favoured access sites for tunnelled catheters and ports include jugular and subclavian veins. A low right internal jugular access has the least likelihood to develop catheter dysfunction, venous stenosis or occlusion. PICC lines and arm ports may be placed in basilic, brachial, cephalic or axillary veins.

The majority of procedures in adults are done percutaneously utilising the Seldinger technique. Percutaneous procedures have been shown to be superior to surgical cut-downs in terms of theatre time, cosmetic result, local infective complications and placement complications.[1,2,3] A study comparing surgical cut-downs with percutaneous techniques found a failure rate of 4.5% and multiple attempts in 13% in the surgical group, compared with none in the percutaneous group.[3] Furthermore, 3.7% of surgically placed catheters were misplaced compared with none in the percutaneous group. There were subsequently 4.0 infections per 1000 catheter days in the surgical group compared with 1.9 in the percutaneous group. Some authors also believe that surgical access will compromise the vein for future use in a way that percutaneous puncture does not.[4] The only disadvantage of the percutaneous technique can be the rate of pneumothorax, which in this study was 3.3% (compared with 0.8% for the surgical group).[3] However, it is my belief when ultrasound and micropuncture access is used (figure 1), pneumothorax is a very rare occurrence. Secondly, image guided placement allows for accurate catheter tip placement increasing the rate of technical success and reducing the rate of catheter dysfunction. Image guided placement has become the insertion method of choice in many institutions, as it has reduced morbidity and mortality, as well as reducing costs and length of hospital stay.[5]

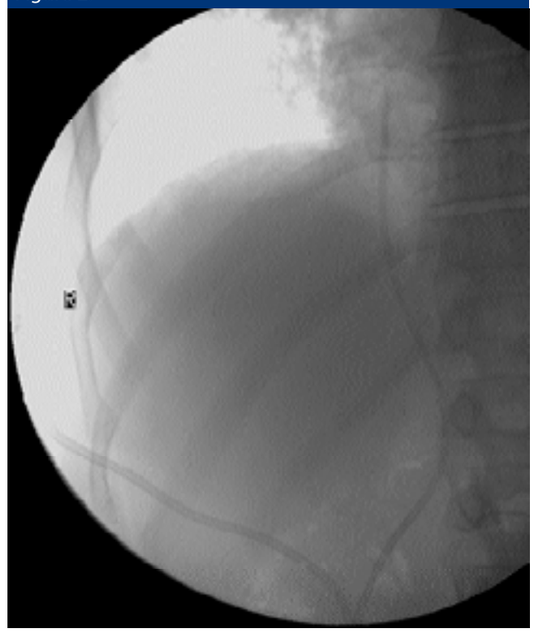
Figure 1:



Ultrasound and micropuncture access set.

Long-term venous access patients may well be challenging because of venous pathology due to previous procedures and underlying medical problems. When the classical access sites are no longer patent, ongoing access may require recannalisation of the central veins or alternate catheter placement sites. Alternate access sites include external jugular, brachiocephalic, femoral, transhepatic, collateral and translumbar access. Such access can usually be provided safely and relatively easily through specialised interventional radiology services (figure 2).

Figure 2:



Translumbar placed portacath in man with bilaterally occluded brachiocephalic veins.

Implantable venous access

Ports are totally implanted devices comprised of metallic or plastic casing with a thick injection membrane on the superficial aspect. The ports may be single or double housing and are placed subcutaneously on the anterior chest wall, lower lateral costal margin or upper arm. A Silastic catheter is tunnelled from the housing to the access vein and the tip is sited as per other forms of long-term venous access. Percutaneous access is gained by placing a non coring Huber type needle through this membrane. The site of needle placement is determined by palpation of the port. The advantages of ports are greater cosmetic acceptance, less maintenance and allow the patient greater freedom to bathe and swim. Ports are particularly useful when shorter periods of intermittent use are required. Disadvantages are that they are more time consuming to place and more expensive than tunnelled catheters. Patients with generous subcutaneous tissues are often not suited to this form of access due to difficulty to palpate the entry to the housing for each access. Conversely, very emaciated patients may suffer from port erosion. Arm ports compare favourably with chest ports and would seem to have similar thrombotic and infective rates.[6]

Tunnelled access

Originally described by Hickman and colleagues in 1979, these include Hickman, Groschong and Broviac catheters. Hickman and Broviac catheters are open ended while the Groshong catheters have a formed blunt end with a slit-like orifice just proximal to the distal end. Hickman catheters are more commonly in use and come in single, double or triple lumen. They are usually manufactured from materials such as soft silicon rubber or PVC and have one or two cuffs on the subcutaneous proximal portion that may act as a microbial barrier. However, controlled trials have failed to show a difference in colonisation rates between cuffed and non-cuffed catheters.[7,8] Tunnelled catheters are particularly popular for access in haematological malignancies.

PICC lines

These are fine-bore soft catheters which are passed from cubital or humeral veins up the axillary vein, into a central vein. PICC lines are relatively easy to place, have quick insertion times and are cheaper than other longer term access devices. However, they do have limitations. The catheter tip is difficult to manipulate and a higher rate of suboptimal positioning is usually accepted. Failure to achieve a central tip position has been shown to occur between 25% and 40% of attempts.[9,10,11] The rate of thrombosis related to the catheter rises from 21% if the catheter tip is in the superior vena cava to 60% if placed in the axillary, subclavian or innominate vessels.[12] The narrow gauge of the catheter limits infusion flow rates and makes aspiration difficult. Also, a high percentage of catheters are removed because of premature failure (21%), often as a result of phlebitis (8.2%) or occlusion (8.2%).[10] This failure rate is higher than that for tunnelled catheters.[13] The majority of solid tumor patients will have this form of access, and this is provided with fluoroscopic and ultrasound guidance by trained radiology nursing staff.

The material of choice for long-term venous access is silicone elastomer.[14] Silicone has been shown to have the lowest rate of infection when inserted peripherally.[15] Recently, attempts to reduce the risk of catheter-related sepsis have included addition of antiseptic or antibiotic compounds. Chlorhexidine or silver sulphadiazine coatings have been studied repeatedly and often shown to reduce the risk of catheter colonisation by between 1.5 and eight times.[16,17,18] Studies of minocycline and rifampicin coatings have shown lower rates of infection than for antiseptic impregnated catheters.[19,20] However, none of these catheters were in place for longer than 14 days and there is no evidence of any long-term effects. The disadvantages of these catheters are the two or three-fold increase in price and the potential risk of increased antibiotic resistance.

Complications

Procedural complications are rare with meticulous technique, image guided insertion and image guided punctures. They include pneumothorax, haemothorax, arterial puncture, catheter malposition, haematoma and air embolism. The Society of Interventional Radiology's published guidelines on image guided central venous access recommend a threshold of 3% for major complications (rates exceeding a threshold should prompt a review of that service).[5]

Indwelling complications include infection, thrombosis, catheter malfunction and catheter fracture. Catheter fracture is rare (< 1%), while the other three are problems integral to all long-term catheters. Catheter malfunction has an incidence of 10-20%, this is often related to fibrin sheath formation or catheter associated thrombosis. The incidence may be minimised with meticulous access and tip placement.[5]

Infection

Infection is an important cause of morbidity, mortality, and increased health costs with long-term vascular catheters. Infection includes exit site infection, tunnel or port infection and catheter related blood stream infections; it does not

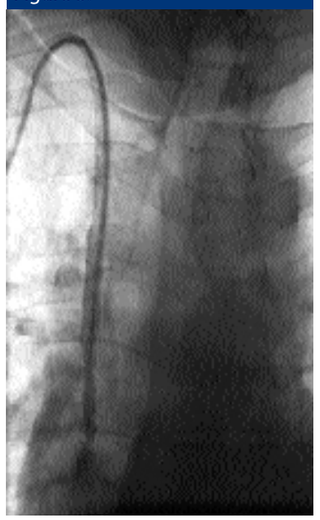
necessarily include colonization of the catheter.

Biofilm formation on catheter surfaces is an important part of the pathogenesis of catheter infection. Use of electron microscopy determined that central venous catheters removed from patients had universal colonisation in the form of biofilms.[21] Biofilms are created by irreversible attachment of micro-organisms to the surface of the catheter, producing a matrix of extracellular polymeric substances.[22] Biofilms also provide protection for micro-organisms by inhibiting the diffusion of antimicrobials.[22] Short-term catheters are usually nontunnelled catheters that become infected by microbial colonisation along the external surface of the catheter caused by migration of skin flora along the catheter within 10 days of insertion. In contrast, infections of nontunnelled catheters that have been present for longer than 10 days are usually caused by intraluminal colonisation.[21,23,24]

PICCs are believed to be associated with lower rates of infection than other nontunnelled catheters.[23,25] While the use of tunnelling and implantable ports reduces the risk of external colonisation and catheter infection.[24,26,27,28] Tunnelled catheters have a dacron cuff that is located a few centimeters proximal to their exit site in the subcutaneous tissue that anchors the catheter in place and is thought to create a barrier against migration of skin flora along the external surface of the catheter. Ports are fully implanted subcutaneously and therefore should have no contact with external skin flora. However, Infections of long-term catheters are frequently associated with intraluminal infection. [23,24]

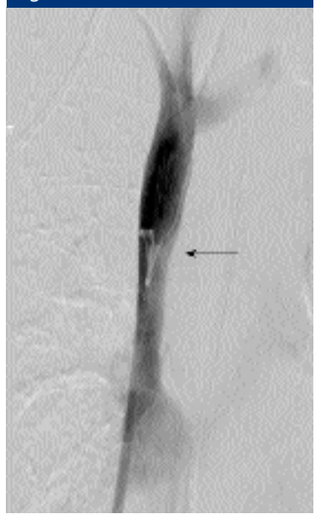
Traditionally, catheter removal has been considered the standard of care for catheter related blood stream infections (CRBSI). However, the advent of tunnelled catheters and implantable ports has prompted many to consider treating CRBSIs with systemic antibiotics without catheter removal because of the invasiveness associated with removal and reinsertion of long-term catheters. As this approach has become more popular, substantial data has emerged suggesting that the success of catheter salvage often depends on the location of infection, the infecting pathogen, and the host's immune status.[29–33] For exit-site infections, antimicrobial therapy alone may be adequate because the mechanism of infection involves a localised soft-tissue infection.[30,34] However, a tunnel or port infection mandates catheter removal because these infections generally involve biofilm formation along the external surface of the catheter, which cannot be adequately treated with systemic antimicrobial therapy.[43,35] There have been many open trials of standard intravenous therapy for CRBSIs with attempted salvage of tunnelled catheters that found success rates ranging from 18% to 100%.[29–42] If catheter salvage is attempted, systemic antimicrobial therapy should be used in addition to antibiotic lock therapy. There is no standard on the timing of catheter replacements for catheter related infections, we replace our catheters at 5-7 days post catheter removal if there are no further febrile episodes or positive blood cultures. A new tunnel is created and the right side is favoured, even if the previous catheter was sited there.

Figure 3:



Fibrin sheath surrounding entire intravascular portion of tunnelled catheter.

Figure 4:



SVC filter containing small thrombus in apex, brachiocephalic sited PICC line.

Thrombosis

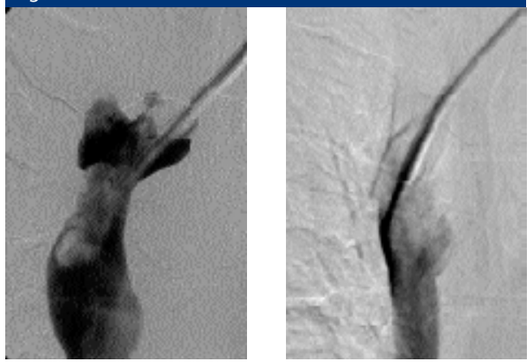
Despite routine flushing with heparin or saline, 41% of central venous catheters (CVC) result in thrombosis of the blood vessel, markedly increasing the risk of infection.[53] Efforts to reduce CVC thrombosis with systemic prophylactic anticoagulation with low-molecular-weight heparin have failed and low-dose warfarin prophylaxis remains controversial. In an autopsy study of patients with CVCs, all 55 patients examined developed a sleeve and, in phlebographic studies, 45 of 57 (78%) patients had a fibrin sheath.[43,44] (figure 3) A venographic study by De Cicco et al, showed that 83 of 95 (87%) patients had these sheaths.[45] These fibrin sheaths over time are always colonised by cocci.[7,46,47] However, fibrin sheaths do not equal or predict subsequent deep vein thrombosis of the vessel in which the catheter is placed.

A very common and usually under-reported event is the development of thrombus within the lumen of the catheter.[48,49,50] This usually is uncovered when the catheter fails to allow blood to be withdrawn or fails to allow infusion through a port. Treatment is by locking the catheter with fibrinolytic agents such as urokinase, streptokinase and tissue plasminogen activator (TPA) and is successful in some 80%–95%.[51,52]

The major thrombotic complication of CVCs is deep venous thrombosis. These mural thrombi may partially or completely block the blood vessel and involve 12%–74% of all CVCs. Most (~71%) are asymptomatic.[54] Venographic studies have shown that approximately 41% (range 12%–74%) of all patients with CVCs developed thrombi.[44,45,46,53] The pathologic effects of CVCs on blood vessels were studied in 74 consecutive autopsies of cancer patients with CVCs in which the cannulated vessel was compared with the contralateral vessel that was not cannulated.[46] Venous pathology (hemorrhage, thrombosis, calcification, ulceration and inflammation) was found in 49% of the cannulated blood vessels but in only 9% of those that were not cannulated. Furthermore, mural thrombosis was seen in 30% of the cannulated vessels and in only 1% of those not cannulated. Nonetheless, symptomatic pulmonary embolus (PE) is relatively rare having been reported in approximately 6% of all patients with upper extremity DVT. However, we have placed three superior vena cava filters in patients with pulmonary emboli for catheter related venous thrombosis in the last 12 months. (figure 4)

Although, malignancy is a risk factor for catheter related thrombosis, catheter tip position is the major determinant of central vein thrombosis. Placement of the catheter tip high in the superior vena cava (SVC) results in a higher incidence of thrombosis than when the catheter tip is placed low in the SVC.[49] In addition, CVCs inserted from the left subclavian vein clotted more commonly than did CVCs inserted from the right subclavian vein.[45,54] In a recent study, 14 of 16 (87%) left side CVCs versus 49 of 79 (62%) right side CVCs were reported to clot.[45] Prophylactic flushes with unfractionated heparin or saline are the standard of care to maintain CVC patency but are inadequate to prevent blood vessel thrombosis. The benefit of systemic prophylaxis with LMWH or warfarin is not been well established. Venous thrombosis causing central catheter malfunction is treated by infusing a thrombolytic through the catheter overnight and this usually resolves the thrombus leaving a normally functioning central access. (figure 5)

Figure 5:



(a) Non functioning Hickman with SVC thrombosis.

(b) Functional access with complete thrombus resolution post Urokinase infusion.

Conclusion

Tunnelled catheters, ports and PICC lines are important means of providing intermediate to long-term central access in oncology patients. Image guided placement has been shown to have the greatest success and lowest complication profile and now represents the standard in most institutions for insertion of these devices.

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Magnetic Resonance and Oncology Imaging

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Abstract

Magnetic resonance imaging is usefully employed on its own or with complementary technologies to evaluate stage and other characteristics for a range of specific tumour types. These include tumours of the central nervous system, head and neck, breast, prostate and colo-rectum, as well as gynaecological and musculoskeletal malignancies. For each tumour type, optimal usage of magnetic resonance imaging involves particularities of tumour type and various other characteristics. For most tumour categories, there are scenarios in which magnetic resonance imaging has only limited application.

Magnetic Resonance Imaging (MRI) is a safe and painless imaging investigation (test) that produces cross sectional imaging of the tissues of the body. MRI is a valuable tool that can aid in diagnosis of a wide range of conditions and is often used to diagnose cancer. It is most effective in detecting and staging cancer of the brain, spinal cord, head and neck and musculoskeletal system. MRI relies on a large magnetic field and certain people should avoid the test. This includes patients with implanted pacemakers and implantable cardioverter defibrillators. Pregnant women should generally avoid MRI, unless it is necessary, as the risk to a developing foetus is not known.

Primary tumours of central nervous system

MRI is now the investigation of choice for the evaluation of cerebral neoplasms. MRI is superior to computed tomography (CT) for tumour detection because of its inherently high sensitivity to altered brain tissue. Although conventional MRI sequences play a major role in determining prognosis,[1] MRI is unable to predict tumour type and grade reliably.[2] The accuracy is limited by the inherent nature of the majority of common brain tumours, which are diffusely infiltrative; MRI is frequently unable to identify the tumour margins. Since many gliomas contain areas of varying histological type, the aim of imaging should be to identify the area of highest grade and thereby guide the stereotactic biopsy appropriately.

Since there is increasing evidence that complete resection of tumour prolongs survival, especially in low-grade gliomas,[3] intraoperative MRI with its ability to provide up-to-date images that reflect intraoperative anatomical change should enable more complete resection.[1,4] However the resection would be limited in neurologically eloquent areas where risk of producing neurological deficit increases.

Functional imaging studies using MRI at 1.5 Tesla or higher are being developed which permit non-invasive determination of centres of task activation in the cortex of the brain.[5] This may allow the accurate mapping of the relationship of the normal functioning tissue to the tumour and enable larger resections while preserving normal function.[6] MR spectroscopy (MRS) has become more readily available and easier to use and is therefore becoming part of preoperative imaging and tumour follow-up. MRS is able to show residual or recurrent tumour outside areas of enhancement seen in gadolinium-DTPA contrast MR scans.

Echoplanar diffusion-weighted imaging (DWI) is routinely used in many institutions. Its main value is to discriminate between an acute infarct and tumour at presentation. Apparent diffusion coefficient (ADC) maps can discriminate between high-grade glioma and normal brain tissue and may help to target the most malignant areas.[7] There is, however, some overlap between Grade II and Grade IV astrocytomas.[8]

Head and neck tumours

There is no scientific evidence to indicate whether MRI or CT is better in the evaluation of head and neck cancers. Each is complementary with its advantages and disadvantages.

CT is reliable to evaluate bony structures. MRI is valuable to evaluate bone marrow involvement. However there is usually bony destruction in CT when tumour invades the marrow space. MRI is more useful around the skull base because of the higher contrast resolution obtained to delineate complex anatomy around the skull base and upper neck. The main disadvantage of MRI compared to CT is the motion artefacts, especially in the region of the lower neck and oral cavity due to swallowing, coughing etc.

MRI has little role to play in the evaluation of thyroid nodules. It cannot reliably differentiate benign from malignant nodules.[9] MRI can be used for tumour staging and assessing mediastinal and oesophageal extension of tumours considered to be aggressive or invasive. Introduction of one and two dimensional proton MRS is promising and allows more specific tissue characterisation, which may help to distinguish benign and malignant nodules.[10]

Musculoskeletal tumours

Staging of all potentially malignant tumours in bone is most accurately achieved by MRI, which should be performed prior to biopsy. This allows measurement of the maximum dimension of the tumour prior to any treatment. CT has a limited role in evaluating the local staging of the tumour but is the examination of choice for evaluation of the chest for metastatic disease. CT is the preferred test where characterisation of the lesion by radiography is inadequate because of inadequate visualisation of the matrix of a lesion. In these circumstances CT imaging may suffice for local staging.[11]

MRI has become the imaging method of choice in evaluation of soft tissue tumours. This is due to improved soft tissue contrast and multi-planar image acquisition, which allows more accurate anatomical delineation of the tumour and its relationship to neurovascular structures. However, inability to detect soft tissue calcification renders a mass non-specific on MRI, whereas a plain radiograph or CT can make the diagnosis immediately obvious. Pulmonary metastasis is best characterised by CT as 10-20% patients with primary soft tissue cancers have pulmonary metastasis at diagnosis.[12] Knowledge of pulmonary metastasis is critical for optimum management of these patients.

Breast tumours

MRI has high sensitivity for breast cancer detection that relies on the tendency of malignant tumours to generate neovascularity. Malignant angiogenesis is seen with leaky capillaries that allow the contrast agent to show high intensity peak with rapid washout that is seen in most, but not all, malignancies. False negative examinations have been reported with well-differentiated ductal carcinomas and lobular carcinoma.[13] Although sensitivity is high for invasive carcinoma, ductal carcinoma in situ (DCIS) is more difficult to detect, with a sensitivity as low as 40%.[14]

Breast MRI is best used as an adjunct to conventional imaging, complementing mammography and ultrasound. Its high sensitivity is helpful in detecting multifocal disease and is being looked at as a possible screening investigation in high-risk populations.[15,16]

False positive breast MRI is seen with fibroadenomas, atypical ductal hyperplasia, lobular carcinoma in situ, papilloma, fibrocystic changes and other benign conditions with focal enhancement. The relatively low specificity is likely to be the greatest impediment to an increase in clinical utility for MRI in breast cancer work-up.

Prostate cancers

MRI is promising for diagnosis and staging of prostate cancers. MRI should not be performed for three to four weeks after prostate biopsy to minimise error from signal alteration related to post biopsy haemorrhages.[17] Prostate cancer is usually seen as low signal focus in T2 weighted sequences. Cancer may not be detected if it does not show low signal in T2 weighted images, if it is located in the central gland or if the peripheral zone is compressed by advanced benign prostatic hyperplasia (BPH). MRI can detect extracapsular or seminal vesicle invasion. Overall the results of MRI for prostate cancer staging have varied over the last decade. A meta-analysis showed the maximum sensitivity for extracapsular extension was 64% and for seminal vesicle invasion was 82%.[18]

MR spectroscopy has been reported to be valuable in diagnosis of prostate cancer. The combination of MRS and anatomical information from phased array and endo-rectal coils can improve the localisation of cancer within the prostate and may improve prediction of extracapsular extension. Combined MRS and MR have a reported positive predictive value of 88-92% and a negative predictive value of 80-86% for depiction of foci of prostate cancer within the gland. They have resulted in increased accuracy of tumour detection from 53% to 75%.[19] High specificity of MRS helps in the distinction of post-biopsy haemorrhage and other benign abnormalities from tumour. MRS may be able to assess tumour aggressiveness. Significant correlation has been shown between Gleason score and MRS choline levels.[20]

Colorectal malignancy

Tumour staging of colorectal cancer can be achieved with endo-rectal coil with accuracies of 80% or greater. T2 weighted images provide better contrast between the tumour and rectal wall than T1 weighted images. Higher resolution obtained with endo-rectal coil demonstrates the different anatomical layers of bowel wall. Using a high resolution technique, thin slice MRI can be used to measure the depth of extramural spread accurately and show good correlation with resected pathological specimens.[21] High spatial and contrast resolution of this technique provide detailed anatomic imaging, which permits assessment of the relationship of the tumour to the mesorectal fascia.[21] This provides a preoperative 'roadmap' for the surgeons.[22] A recent prospective study has shown MRI predicts the histological status of colorectal malignancy with a positive predictive value of 92%.[23] Ability of MR to identify extramural venous invasion, peritoneal infiltration and depth of extramural spread[23] allows a more specific preoperative treatment strategy.

MRI has shown considerable promise in identifying hepatic metastasis which are < 1 cm and are difficult to characterise by CT or ultrasound. The availability of liver specific contrast agents, such as magnafodipir trisodium (Mn-DPDP), has resulted in further improvements in detection of metastatic

disease. In a study comparing the performance of Mn-DPDP MR with CT and intraoperative ultrasound, MR influenced the operative decision in 74% of cases.[24] Compared to the histopathology, sensitivities for CT, MR and intraoperative ultrasound were 61%, 83% and 93% respectively.[24]

Gynaecological malignancies

MR is the preferred technique for imaging carcinoma of the cervix. The ability to image in oblique planes and superior soft tissue contrast resolution gives MR a major advantage over other imaging techniques. MR has an overall staging accuracy of 79%.[25, 26] The accuracy for detecting parametrial invasion averages 88% (range 79 – 100%) and of assessing vaginal extension 90% (range 83 – 100%).[26] However, the major contribution of MR to planning treatment is the very high negative predictive value for determining parametrial invasion. Compared to CT, MR offers significantly better evaluation of tumour size, stromal involvement and local and regional extent of disease in pre-treatment imaging.[27]

Contrast enhanced MR is superior to ultrasound in characterising adnexial masses.[28] Both techniques are highly sensitive but MR is more specific than ultrasound at identifying malignant masses. Spread of ovarian cancer into uterus, bladder or rectum may be better appreciated on MR than CT. MR has a limited role in the evaluation of intra-abdominal tumour spread; peritoneal deposits greater than 1cm in diameter can probably be identified with a similar sensitivity for both MR and CT.[29] Disease within the mesentery or implants on the wall of small and large bowel are better detected by CT. MR remains insensitive for detecting peritoneal, mesenteric or omental tumours in ovarian malignancy. The appropriate role for MR is to characterise the ovarian masses rather than abdo-pelvic staging of proven ovarian cancer.

MR is not an appropriate investigation for diagnosing endometrial mass and should only be carried out for staging purposes when biopsy has given a specific histological diagnosis of endometrial carcinoma. The sensitivity and accuracy of MR in detecting deep myometrial invasion ranges from 82 – 94%.[30, 31] Contrast enhanced MR performed significantly better than non-contrast MR or ultrasound for myometrial invasion.[32] The accuracy of MR is not widely documented in patients with advanced stage III and IV disease.

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Implantable peritoneal ports in the management of malignant ascites – technical innovation

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Abstract

A minimally invasive method for palliative drainage of symptomatic malignant ascites by placing a peritoneal port in the Interventional Radiology Suite would allow patients to avoid repetitive trips to the Radiology Department for paracentesis and for paracentesis to be performed by the palliative care team at home. Since 2003 960 patients at Westmead Private Hospital have received either a chest or a brachial port in the Department of Radiology. The procedure was modified and used for the placement of tunnelled multiple side holed Peritoneal Ports using a modified Seldinger technique in the Interventional Radiology Suite. Patients with symptomatic ascites were able to be drained at home and all achieved significant improvement in those symptoms attributable to the ascites. It is postulated that the complication rate will be much lower than with tunnelled peritoneal catheters placed for palliative drainage of malignant ascites. Accordingly, percutaneous placement of Peritoneal Ports in the Interventional Radiology Suite appears to be a viable and safe technique in patients who have symptomatic ascites that requires frequent therapeutic paracentesis for relief of their symptoms.

Ascites is a common complication of advanced malignancies with symptoms of marked abdominal distension, shortness of breath, diminished appetite and fatigue, which comprise cancer patients' everyday functions. Treatment options for intractable ascites includes serial paracentesis, peritoneal venous shunting, tunnelled peritoneal catheter hanging externally and more recently tunnelled peritoneal catheters attached to subcutaneous ports implanted under the skin.[1]

In the past permanent drainage catheters have not been considered a viable treatment option for malignant ascites due to infection, malposition or occlusion. Cuffed-tunnelled peritoneal catheters have been used for many years for peritoneal dialysis with an acceptable complication rate. A recent article published showed a two-year catheter survival rate of 49 to 82%.[2,3,4]

It was therefore appropriate to re-evaluate placement of peritoneal ports specifically designed for peritoneal access as a means of controlling malignant ascites and develop a technique for placement in the interventional radiology suite.[5]

Between January 2003 and August 2005 46 peritoneal ports were placed in patients with a short life expectancy and with symptomatic ascites. The ultimate goal was to repeatedly access the peritoneal port and to perform ascites drainage at home, thereby avoiding frequent trips to the radiology department for image-guided drainage.

Previously these ports were placed surgically, which necessitated hospital admission and hospital care before discharge.

Using ultrasound and performing the procedure in the angiography suite, a large collection of ascitic fluid is identified. The inferior epigastric artery and the venous perforators in the region where the port is going to be placed and also identified.

A Seldinger technique is used to create a tunnel through the subcutaneous tissues into the peritoneal cavity, after which the peritoneal port catheter is placed within the pelvis, followed by placement of the port in the subcutaneous tissues adjacent to the ilium on the left or right side.

The procedure is performed using buffered local anaesthesia only and under cover of one gram of Cephazolin and the wound closed with an absorbable suture. The port is heparin locked at the end of the procedure.

With the help of the palliative care unit a home nursing care protocol has been developed. The port is accessed at home on a weekly basis or more frequently if necessary using a Huber needle with dependent drainage. A maximum of three litres of ascites are drained at any given time to avoid volume depletion and the port heparin locked after the procedure.

Very few complications have been experienced as listed below:

(1) In one patient, there was accidental puncture of the inferior epigastric artery with contained haematoma formation in the anterior abdominal wall.

(2) One patient presented with wound infection and the port was removed.

(3) In one patient, there was accidental transection of the catheter by the Huber needle and the catheter and port was replaced.

(4) One patient developed bowel obstruction due to progressive disease.

(5) Several patients developed leakage around the insertion site, managed with decreasing intra-abdominal pressure by increasing frequent drainage with successful resolution.

(6) Several patients with exudative ascites developed port blockage, managed with saline irrigations and in one instance with port replacement.

(7) No patients presented with peritonitis or wound dehiscence.

Discussion

Intractable malignant ascites is often a disabling disease and decreases the quality of life in patients with a short life expectancy.

Serial paracentesis may be performed with or without ultrasound guidance and has the advantage of being relatively easy to perform with a 1% major complication rate. The disadvantage of serial paracentesis includes repeated trips to the hospital and the radiological department.[6]

Peritoneovenous shunting has an advantage as no hospital visits are required for drainage and there are no fluid or protein losses. A major disadvantage is the invasiveness of the procedure and poor long-term patency and excessive complications, which includes disseminated intravascular coagulation.[7]

Tunnelled peritoneal catheters with an external component

for drainage are easy to place in the radiology department. They have a low complication rate and include the advantage of home drainage. The disadvantage relative to the peritoneal port includes a theoretically higher risk of infection and the risk of dislodgment.[1,8]

Rosenblum was first to describe the placement of cuffed-tunnelled venous access ports for the drainage of ascites. These ports were venous access ports that were modified with small six French catheters attached to the port.[9]

A technique was developed whereby a peritoneal port with a large bore catheter of 16 French was placed by an interventional radiologist in the radiology department using local anaesthesia, ultrasound and digital subtraction angiography. The peritoneal ports used were all previously placed surgically. The procedure were found to be a safe and effective treatment option for malignant ascites with a 100% success rate and 90% long-term patency rate with a low complication rate.[5]

Insertion in the outpatient setting is well tolerated and drainage at home improves patient quality of live and reduces frequent trips to the hospital. Liaison between community and hospital palliative teams is vital in providing optimal home based care.

Vertebroplasty in oncology: a novel approach to pain relief in the cancer patient

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Abstract

The mechanism by which vertebroplasty is effective in providing pain relief is unclear, but may involve destruction of nerve endings consequent upon the injection of bone cement into the vertebral body. Vertebroplasty is now employed to treat osteoporotic compression fractures and spinal metastases which are the most common vertebral body tumours. Patients likely to benefit are those having relative spinal canal compromise with epidural involvement and vertebra plana related to osteoporosis and secondary to metastatic disease. Application of the procedure is critically dependent upon appropriate imaging. While evaluation by prospective randomised controlled trials is not available thus far, a range of reports have consistently documented

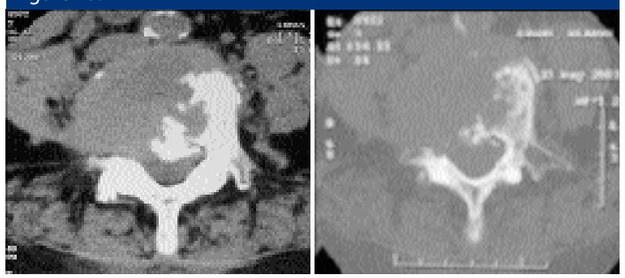
Percutaneous Vertebroplasty (PVP) by definition is a procedure which augments the strength of a weakened and or fractured vertebra by injecting bone cement, usually Polymethylmethacrylate (PMMA) into the vertebral body. This augmentation restores some of the mechanical properties of the vertebra, stabilising the fractured vertebral body, thus relieving pain. The technique, using a fluoroscopically guided, percutaneously placed needle, was pioneered in France 1987 to treat benign aggressive haemangiomata.[3,4]

Currently the two most commonly treated conditions are osteoporotic compression fractures and spinal metastases, which are the most common vertebral body tumours.8 Spinal metastases are most frequently related to breast lung or prostate carcinomas. Multiple myeloma and lymphoma are also frequent causes of disseminated spinal lesions. The lumbar spine is most frequently involved.[2] The associated back pain in many lesions leads to impaired functioning and significant reduced QOL. This often results in chronic pain syndromes with loss of sleep, decreased mobility and depression.[2]

Why it works

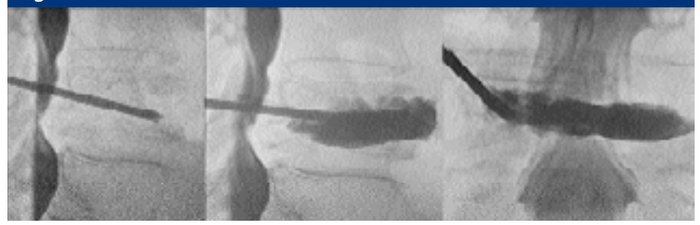
Various theories on the procedure's ability to provide pain relief have been suggested. In cases of vertebral metastases, local pain is thought to be secondary to bone fractures and the reaction of the remaining nerve structures to the tumour's mass effect.[2] It is likely that a component of the vertebroplasty-related analgesia is secondary to immobilisation of microfractures and reduction of mechanical forces. The destruction of nerve endings caused by the cytotoxic, mechanical and vascular effects of PMMA, as well as the thermal effects of polymerization, however, may also play a role in pain relief. Furthermore, it has been proposed that PMMA has an antitumoural effect, which may explain the rarity of local recurrence after vertebroplasty. This effect may be the result of the cytotoxicity, thermal effects and ischemia produced by PMMA.[3,5,7] Analysis of pathological findings in patients in whom PMMA has been injected has demonstrated a macro and microscopic rim of tumour necrosis six months after vertebroplasty/tumour injection, which seems to extend outside the limits of the cement.

Figure 1a:



Pathological fracture d/t Renal cell cancer. Axial CT demonstrates gross destruction of the vertebral body with associated destruction of the posterior wall.

Figure 1b:



Pathological fracture d/t Renal cell cancer. PVP needle is placed into the osteolytic lesion. Ba. PMMA is injected stabilising the fracture. Myelographic contrast confirms no retropulsion into the compromised spinal canal

Relevant literature has consistently identified uncorrected coagulopathy, spinal canal compromise with epidural involvement and severe vertebral body compression (vertebra plana) as contra-indication for percutaneous vertebroplasty.[7,9,12] More recent studies have demonstrated the safe and highly effective use of percutaneous vertebroplasty in patients with relative spinal canal compromise with epidural involvement and in vertebra plana related to osteoporosis and secondary to metastatic disease.[1,12,13] Interventional radiologists have also begun treating destructive pedicle lesions by cement injection with excellent results.[11]

Technique

Careful patient selection must be undertaken when pain relief is the goal, as in patients with advanced disease, the source of pain may not be limited to a given vertebra.[3,4,5]

Diagnostic MR and CT scanning are required to accurately define the infiltrated vertebra. The procedure is performed by an interventional radiologist familiar with high quality imaging, either under fluoroscopy or CT guidance. The patient is placed prone and local anaesthesia is provided at the appropriate level. An 11G or 13G PVP (percutaneous vertebroplasty) needle is used to gain access to the involved vertebral body.

A bipedicular or unipedicular approach is used. The choice of approach depends on the different access geometry in, for example, the L-spine compared to the T-spine and also depends on the degree of cement distribution across the vertebral body. The degree of pedicular involvement and intention to treat or avoid the pedicle is also taken into account.[10]

A biopsy sample should be obtained if the primary cancer is unknown and if the fracture is suspicious for metastasis.[1,3,4] The barium impregnated PMMA (polymethylmethacrylate) bone cement is prepared and injected once the proper consistency of the compound has been reached. From a technical point of view both the osteolytic part of the lesion and the part of the vertebra that appears architecturally normal should ideally be injected with cement. A cement distribution limited to the boundaries of a lytic cavity is however, often observed and generally results in excellent pain relief.[8]

The entire lesion does not need to be filled because there is no relationship between the amount of the lesion that is filled and subsequent pain relief.[6] On the contrary, complete or over enthusiastic filling of the lesion leads to an increased risk of cement leakage. The total duration of the procedure is 0.5 to 1.5 hours. The procedure can be performed on an out-patient basis with 3-4 hours post procedure observations recommended.[8]

Prognosis following vertebroplasty

There are no prospective randomised controlled studies on vertebroplasty published to date,[2,9] however numerous other studies have all documented the efficacy of vertebroplasty in providing pain relief and improving mobility in patients with metastatic spinal disease.

These studies have documented improvement of pain in 80 to 97% of patients within 48 hours of the procedure.[2] At six-month follow up, 65 to 76% of patients in all studies experienced persistent pain relief.[2]

Unlike the delayed effects of radio-therapy, vertebroplasty provides immediate strengthening of the anterior column, which may limit painful vertebra body collapse. Furthermore, vertebroplasty provides early mobility, which limits complications related to inactivity. Increased mobility and pain relief lead to improvement in quality of life for these patients.

The published complication frequency is 1.3% in osteoporotic fractures and 10% in metastatic disease.[11] The higher frequency probably reflects increased vertebral body destruction and or the poor general condition of the cancer patient, as well as the progressive destructive nature of the disease. Note however, the long-term complication rate in patients with metastatic disease is 1.7%.[2]

Percutaneous vertebroplasty and radiotherapy are complementary procedures with radiation preferred after percutaneous vertebroplasty when possible.[8]

Conclusion

Percutaneous vertebroplasty is becoming a standard of care for palliative pain control associated with neoplastic pathological compression fractures. Severe compression fractures and fractures with epidural involvement should not contra-indicate this procedure in selected patients with cancer, intractable pain, few treatment options and reduced life expectancy.[1,12]

Vertebroplasty is complementary to both surgery and radiotherapy and should be considered as a treatment modality in patients with metastatic spinal disease.

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Medical Oncology Group Of Australia
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Snake oil, coffee enemas and other famous nostrums for cancer – a recent history of cancer quackery in Australia

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To begin in the middle. For legal reasons I start with a disclaimer: despite the title, I do not by any means imply that everyone mentioned in this article is a quack in the word's pejorative sense. My aim here is to outline some of the unorthodox claims for the cure of cancer that achieved prominence in the Australian public eye over the last 30 years or so, to the extent of seriously interfering with the normal practice of cancer medicine. Some of those making such claims might fittingly be labelled as 'quacks', others not.

Human beings have always sought easy and safe methods of treatment for illness, understandably so. The uncomplimentary term 'quack' for a peddler of nostrums (simple remedies) arose in the 17th century as short for quacksalver, a hawker who sold quicksilver (mercury) as a cure for syphilis. In the American west in the 19th century rival travelling salesmen dispensing snake oil tried to outdo one another with claims that their product cured the widest range of conditions. One for example, prepared from 'pure rattlesnake oil', was said to be beneficial for 'headache, neuralgia, toothache, earache, backache, swellings, sprains, contracted cords, stiff joints, cuts and bruises and all aches and pains'. While we may wonder, 150 years later, what was meant by 'contracted cords', more relevant to the current topic is the claim that this product was effective for 'swellings', a description which could well have included some types of cancer.

Confusingly, treatments that do not conform to standard Western notions of appropriate medical care have been described in many different ways. Use of the term 'complementary and alternative medicine' (CAM), an all-embracing phrase which was introduced about 10 years ago, has reduced the confusion. However 'complementary' and 'alternative' are not the same. Complementary treatments are used along with conventional medicine whereas alternative treatments are used instead of conventional medicine. For most their real value is not known as few have been subjected to high-quality scientific studies. Many surveys have shown that cancer patients worldwide are heavy users of CAM. Because definitions vary, comparisons are not simple, but one international survey in the late 1990s estimated that between 7 and 64% of patients in a variety of countries used such treatments.[1] Recent Australian estimates put the figure at 22%[2] and 52%[3] and in New Zealand at 49%[4]. It is well known that most patients do not tell their doctors of such use unless specifically asked. It has been stated that Australians spend approximately the same on CAM as they do on government-subsidised treatments provided through the Pharmaceutical Benefits Scheme. There is wide variation in the types of CAM treatments used in different parts of the world and at different times, depending on many local factors including extent of publicity and the charisma of their champions.

One claim often made by proponents of CAM is that their treatments are 'natural' and therefore, by implication, harmless or at least less likely to have side-effects than conventional pharmaceuticals. However to suggest that because something is 'natural' it is axiomatically without toxicity is specious: there are many natural products that are toxic and dangerous, such as snake venom, many plants and tobacco. Unless subjected to thorough testing, the true rate of side-effects of any product - 'natural' or artificial - cannot be known. On the other hand, many anti-cancer medications included in the modern pharmacopoeia are derived from plants, either directly or as synthetic variants, including vincristine from the periwinkle, etoposide from the mandrake plant and recently taxanes such as paclitaxel (Taxol) from the pacific yew tree.

Soon after I returned to Australia in the mid-1970s after several years overseas training, I was met by remarkable headlines, particularly in the now defunct Melbourne newspaper Truth, claiming that a refugee from Czechoslovakia working in New Zealand was achieving remarkable success in treating cancer. According to reports, the wicked NZ medical hierarchy though was suspicious of these claims and was trying to have this modern Semmelweis deregistered. In a case with remarkable similarities to several more recent ones, Milan Brych was strongly supported by an irresponsible media. His journey from Czechoslovakia to New Zealand, Queensland, the Cook Islands and eventually to jail in California is fascinating and instructive.

Milan Brych escaped to Austria at the time of the anti-communist uprising of 1968 – the so-called 'Prague spring' – and its subsequent suppression by the forces of the Warsaw Pact. On arrival in NZ he claimed to be a doctor and cancer specialist. His name was not in the published list of graduates of his professed university because, he said, it had been removed as punishment for his anti-communist activities. In the cold war atmosphere of the time he was believed by some authorities in NZ, even though in fact Czech universities under communism never lost their autonomy to that extent.

So he was registered as a medical practitioner and, after a period in junior appointments, worked in a cancer centre in Auckland. It wasn't long before word got out that he was administering a secret remedy, possibly prepared in his home kitchen and according to some, achieving remarkable successes. Thanks to heroic efforts by a number of senior physicians in NZ, especially Professor Peter Scott, the fact that he had been in jail as a confidence trickster during the time he claimed to have been at medical school was revealed, and after a long series of delays he was struck off the NZ medical register in 1974. (It seems he had some knowledge of medicine because for a while he had worked as a laboratory technician.) But this wasn't the end of the matter. The NZ Supreme Court reinstated him and it wasn't until three years later, in 1977, that Brych finally abandoned his legal defence against appeals by the NZ Medical Council, by which time the matter had again reached the NZ Supreme Court.[5] He then moved to the Cook Islands, a tiny Pacific Ocean nation where the parliament passed an amendment to the local Medical Act to allow him to begin his cancer practice immediately on arrival. There he set up his new clinic, and with strong encouragement from the Truth, patients from Australia and NZ flocked to him. To me it brought about feelings of sadness that patients could be so easily misled into believing that the only person in the world who had the cure for cancer was working on a remote Pacific island. His presence ultimately caused such a local scandal that an election was fought over it. Brych's supporters lost and he was forced to leave the the Cook Islands. In the meantime so many patients had died and been buried there that the cemetery became known as the 'Brych yard'. During this period his case was taken up by the Premier of Queensland, Joe Bjelke-Peterson, who wanted him to set up a clinic in Brisbane. It took a courageous effort by other politicians, particularly the Queensland and federal Ministers for Health, Dr Llew Edwards and Dr Ralph Hunt, respectively, to block such a move. Brych next fetched up in California where he obviously couldn't change his behaviour, as in 1983 he was jailed there for several years for practising medicine without a licence.

Why was he such a success for a while and why was he able to generate such support? Although his actual methods are not known for certain, as he never revealed them despite many promises that he would, it seems that in addition to his secret brew he used cyclophosphamide, vincristine, other chemotherapeutic agents and steroids at a time when chemotherapy was in its infancy and the specialty of oncology barely existed. Indeed, few would disagree now that, at the time, the profession dealt poorly with advanced cancer. There is little doubt that some patients who were told 'nothing more could be done' did gain temporary benefit from his ministrations. Almost certainly though better results were available to those patients who were able to find their way to the early oncology departments of the time. Furthermore, those working with him tell stories of overdoses, deaths from septicaemia, severe peripheral neuropathy and other complications. He was obviously extremely charismatic – his eastern European accent seems to have given him an air of mystery. As in many such cases the staid, conservative medical profession was accused of hampering progress and of being instinctively opposed to anyone with radically different ideas. This case, the most unambiguous example of quackery and local medical fraud in our recent history, contains many lessons. Milan Brych was clearly a charlatan. However the profession itself was not blameless. More widespread recognition of the potential benefits of chemotherapy and more widespread availability of clinical trials would have made newer anti-cancer treatments available to more patients, many desperate to try anything that offered some hope. If we tell our patients 'nothing more can be done', it is no wonder that some then turn to those that promise otherwise. And it's never true to make such a statement; to do so is to confuse 'cure' with 'care'.

The next widespread phenomenon in the CAM world in Australia was Ian Gawler. This young veterinary surgeon who was cured of osteogenic sarcome in the 1970s believed his cancer to have been caused by improper thinking and wrote and spoke widely of his belief that he had cured his own cancer through meditation and the adoption of a variety of diets and herbal treatments, including coffee enemas. He was encouraged in these beliefs by a prognosis given him by someone in the medical profession that he had only two weeks to live. (A lesson that one must never give a prognosis containing an exact figure – any such figure will surely be wrong.) The profession was accused of being blind to the value of such alternative treatments and many patients spend long periods sitting in corners trying to mediate their cancers away, and in adopting diets of dubious nutritional value. Some of the claims he made in his books included the following about cancer, that meditation: 'is the single most powerful tool to aid recovery from disease'; 'allows the body to remove tumours'; and 'increases quality & quantity of life' [my emphasis]. Amongst his quaint recommendations were the 'Grape Cure'; the herbs mistletoe; red clover and comfrey; coffee enemas; megadose vitamins and vitamin C; to adopt a 'natural life'; to avoid chocolate; sexual excess and 'too much television'; not to use a microwave oven; and to drink spring or rain-water.[6]

Gawler's ideas were to a large extent based on the hypothesis that mental stress increases the risk of cancer, an attractive notion when one is seeking to explain the inexplicable. The evidence in favour of the concept, and of possible adverse influences of mental states on prognosis, even then were at best questionable but more recently the ideas have been fairly conclusively disproved.[7,8] Indeed, there is some surprising recent evidence that mental stress may actually provide protection from cancer![9]

Many of us at the time argued that Gawler's ideas were unproven and some were potentially damaging, especially to the extent that patients adopted them as alternatives rather than as complementary to standard care, or spent a great deal of time on them to the detriment of their relationships. In the late 1970s and early 1980s his claims received enormous publicity and were quite disruptive to standard medical practice. One lesson for the profession was the need to provide patients not only with proven anti-cancer treatments but also with psychological support. In fact it could be said that the speciality of psycho-oncology and the more recent development of 'integrative oncology' arose to some extent out of pressure from people such as Gawler and his followers. To that extent at least Gawler has done the practice of oncology some real good. However, Gawler has not been completely frank in his description of the treatments he received. While he may have spent a lot of time on his own self-prescribed remedies, he also received orthodox treatment, although in his books and interviews he has played down their role in his cure. Like any anecdote, in a single case where a combination of treatment measures is used, it is quite impossible to say which one or more was responsible for the ultimate good outcome, even though the patient and his supporters may believe in the one and not the others. Subsequently there have been a number of publications which have shown that meditation, while often able to help patients cope with the exigencies of a serious illness, in no way can bring about cure or affect the biology of cancer. Indeed anyone with a basic knowledge of biology could have predicted such results, but it is easy to understand how desperate patients who lack biological or scientific training can accept such claims. Since then Gawler seems to have quietened down. His latest claims seem only that he can provide psychological support, claims which seem quite reasonable and helpful. He runs a 'retreat' in rural Victoria that promotes 'inner peace', a concept that is highly appealing and, provided no extraordinary claims are made for it, one with which it is hard to argue.

The two proposed treatments described above were home-grown, but the next widely disruptive alternative treatment was Laetrile, an extract of apricot pips said to be a vitamin, so-called vitamin B17. It became very popular in the United

States as well as Australia and enjoyed considerable political support. Its proponents strongly pushed the conspiracy theory, that the medical profession really knows the cause and cure of cancer, but denies this information to the public in order to increase profits for itself and its malign bedfellow the pharmaceutical industry. Whether it is this, or its cunning mislabelling as a vitamin (which, if true, would indicate it to be a nutritional requirement for all), or the false claim that cancer cells are susceptible to the cyanide in laetrile whereas normal cells are not, for whatever reason it has enjoyed great popularity in the US. When it was banned there after studies conclusively showed it to be of no value and indeed potentially dangerous,[10-12] laetrile clinics were set up in Mexico just across the border from the US. They continue to operate. Indeed this substance is enjoying a resurgent popularity perhaps encouraged by a considerable internet presence. In the 1980s many Australian patients were so taken by the pseudo-scientific clap-trap that accompanied it that they were prepared to travel to Mexico for treatment, at great expense. Many others arranged its importation for personal use.

In the 1990s the alternative treatment that caught the imagination of many patients was shark cartilage. Its popularity was based on two myths, one, that sharks don't get cancer and two, that it had shown unexpectedly good results in a trial in Cuba. In fact sharks do get cancer (but even if they didn't, so what? By this logic we should all eat extract of spiders to prevent measles). Like many other popular forms of CAM this one too was the subject of a media bandwagon, this time by the American 60 Minutes program which claimed that 3 of 15 patients in Cuba had had excellent results. The American Cancer Society concluded that these results were 'incomplete and unimpressive'. Even the National Center for Complementary and Alternative Medicine (which was set up by supporters in the US Congress) stated that this trial was too small and insufficiently detailed to draw any conclusion. Subsequent studies have convincingly shown that shark cartilage is useless for the treatment of cancer.[13] In fact its proponents have been heavily fined in the US for false advertising in connection promotion of its use for cancer treatment. During its hey-day many Australian patients were persuaded to part with considerable sums to import it.

The most recent large Australian CAM phenomenon was again media-promoted, and was for an elderly WA doctor's treatment with microwaves, radio waves and so-called 'glucose blocking treatment'. Dr John Holt has used some version of this treatment for over 30 years and like many other methods discussed here, has enjoyed the patronage of leading politicians as well as the media. The National Health & Medical Research Council (NHMRC) carried out a study of his methods back in the 1970s and found them of no value.[14,15] A controlled comparison of his methods with standard radiotherapy in the treatment of rectal cancer carried out during the 1990s concluded that "VHF microwave therapy in conjunction with radiotherapy produces no therapeutic advantage over conventional radiation therapy alone in the treatment of locally recurrent rectal carcinoma".[16] Most recently (2004) Dr Holt again came to public notice because of promotion on a popular television program, A Current Affair. All oncologists during this time had patients clamouring to fly to Perth for the treatment. In response to the public outcry, the NHMRC mounted a large scale investigation, lasting over a year and costing $250,000, which concluded that his treatment was in no cases better than standard treatment and for many types of cancer it was clearly worse. The report is available on the internet http://www.nhmrc.gov.au/news/media/rel05/holt.htm (accessed 17 October 2005).

In addition to these prominent forms of CAM that have taken Australia by storm, there are many others that have been or are presently being actively promoted, although not perhaps with the same extent of publicity. As reported elsewhere this was clearly shown by the offers and suggestions made to a prominent Australian politician when he developed cancer recently. Jim Bacon, Premier of Tasmania, developed lung cancer in 2004, and was inundated with offers and suggestions of CAM. While they included some that could be helpful such as meditation and sensible dietary advice, many of the proposals were quite wacky. They included an 'energy cleaner machine' and a 'blood zapper'; a white food diet, a green food diet and liquorice (a black food diet perhaps?); colloidal silver and 'stabilised oxygen'. This survey shows that many of our patients are under considerable pressure to adopt CAM and that an amazing variety of such treatments is available and being actively promoted in our community.[17]

There are more dangers in the use of CAM than is often recognised. They include for example malnutrition from unbalanced diets, cyanide poisoning from laetrile, electrolyte disturbances from coffee enemas and interference with standard treatments –the herbal anti-depressant St John's wort can reduce the effectiveness of the cytotoxic drug irinotecan, which is used for the treatment of colon cancer. The 2003 Pan Pharmaceuticals scandal, when more than 1600 herbal and other preparations were taken off the Australian market because of evidence of incorrect labelling and inadequate quality control procedures, showed the need for better regulation of the 'alternative medicine' market.

How should the medical profession respond? How do we best protect our patients from misleading and potentially dangerous excursions when they seek the pot of gold at the end of the rainbow? We must firstly recognise that patients' needs go well beyond the purely medical. Increasing numbers of large institutions world-wide are offering safe complementary therapies. Amongst the leaders of this movement is Dr Barrie Cassileth, a pioneer and strong advocate of the need for scientific testing of claimed alternative treatments. At the Integrative Oncology Service of the Memorial Sloan Kettering Cancer Center in New York, she offers patients complementary therapies which are backed by scientific evidence, such as massage and music therapy, and avoids potentially harmful or disproved therapies.[18] In Australia similar support is available to cancer patients in Perth through the Browne Cancer Support Centre at the Sir Charles Gairdner Hospital,[19] in Melbourne at the Peter MacCallum Cancer Centre and elsewhere at a limited number of other centres. Patients enjoy this type of supportive care which should be available at more of our large cancer hospitals.

The American Cancer Society (ACS) advises patients to ask a series of questions when confronted by suggestions from outside the orthodox profession. 1) Is the treatment based on an unproven theory? 2) Does the treatment promise a cure for all cancers? 3) Are you told not to use conventional medical treatment? 4) Is the treatment or drug a 'secret' that only certain providers can give? 5) Does the treatment require you to travel to another country? 6) Do the promoters attack the medical/scientific establishment? I would add a seventh question: are you required to outlay a large sum? If the answer to any of these questions is 'yes', says the ACS, one should be quite suspicious and sceptical.

Unfortunately an old saying applies: there are no simple answers to complex questions. Progress takes a long time and hard work, but a century of cancer research is certainly starting to pay off. For example, as a result of knowledge gained over recent decades from clinical trials involving thousands of women with breast cancer, the mortality rate from this disease has dropped by half, so that two-thirds of newly diagnosed patients can now expect to survive 20 years or more and 'to die of something else'.[20] The first fruits of the molecular biology revolution are benefiting cancer patients, one striking example being the drug imatinib. This chemical agent, a product of painstaking laboratory research, blocks a factor responsible for tumour cell growth. Taken orally, it can dramatically shrink gastro-intestinal stromal tumours and bring about remission of chronic myeloid leukaemia.

The hope for our patients lies in more such research. The greater the number that enter clinical trials of new treatment the more will benefit directly and the quicker the answers will come to cure future patients. I pay tribute to the myriad of women in breast cancer trials, including many from Australia, whose participation has led directly to the major improvements in outlook for this disease which are now quite apparent. I particularly pay tribute to paediatricians treating childhood cancer, who over the past 50 years have been responsible for putting over three-quarters of their patients into clinical trials and thus rapidly having brought about the cure rate for childhood acute lymphoblastic leukaemia from nil to over 80%. The same dramatic improvements could be achieved for adult cancer patients in much less than 50 years if a similar large percentage entered clinical trials. This is something we and the cancer public must work towards.

*The Medical Oncology Group of Australia/Pierre Fabre Award is granted annually in recognition of an outstanding contribution to the scientific study of cancer and/or to the control of cancer in Australia by an Australian scientist, clinician or other health care professional.

This is an edited version of the lecture presented at the Medical Oncology Group's Annual Scientific Meeting in Hobart in August 2005.

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Articles

The Cancer Council Australia's Student essay competition

Cancer Education For Medical Students: Opportunities And Challenges For The 21st Century

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With the variable, non-uniform curricula in most (medical) schools it was early recognised that some means of determining progress would be most desirable. Thus in 1948 an objective type of evaluation was developed. (Wood 1987)

The idea that oncology education needs constant evaluation, updating and standardisation is not new. In one of the first published investigations of Australian undergraduate cancer education, substantial differences between medical schools were found, primarily in curricula content (Tattersall & Langlands 1993). Subsequent evaluation of cancer education and surveys of medical students' oncology knowledge and skills have not indicated a high standard of training in these areas (Barton et al. 2003, Tattersall et al. 1988, Smith et al. 1991). Perhaps more disturbing are the results of a comparison of skills of interns in Australia and New Zealand from 1990 and 2001 (Barton et al. 2003). This study found that graduate medical program curricula appear to have successfully introduced new course material and new methods of teaching. However, these programs have not always succeeded in producing doctors with better knowledge about cancer (Barton et al. 2003). This is in the context of an "Ideal Oncology Curriculum" having been developed by The Cancer Council Australia in 1989 (Oncology Education Committee 1999, Tattersall & Langlands 1993). With the changes in the curricula throughout Australian medical schools (eg. graduate medical programs) and the establishment of new medical schools (see below) the opportunity has arisen for curriculum review, as well as the chance to enhance and revitalise teaching in various areas including oncology education. Although ongoing analysis of graduates' knowledge and skill has been undertaken and the ideal oncology curriculum, teaching resources and programs have been developed (De Vries et al. 2002, Galaycthuk 2000, Geller et al. 2000, Mehta et al. 1998 and Oncology Education Committee 1999), we seem to be going backwards in terms of graduate knowledge and exposure to patients with cancer (Barton et al. 2003). It should be noted that the Australian experience is not unique. Sloan et al. (2000) from United States stated that "there is clearly a vacuum in the area of cancer education" and Biswal et al. (2004) from Malaysia found that undergraduates had profound deficiencies in basic knowledge of cancer and cancer prevention.

Cancer affects one in three Australians, making it an important component of medical education (Koczwara et al. 2005). That cancers should be cured is no longer a Utopian ideal (Jones et al. 2001). It has been estimated that 80-90% of all cancer deaths in developed countries may be preventable through primary prevention and secondary intervention (Zapka et al. 2000). The progress made in medicine over the past century has changed the face of society and the practice of medicine. Patients presenting are now more likely to have chronic disease and require multiple specialist referrals. Alongside these changes (and perhaps because of them) the social contract between doctors and patients has changed along with patient expectations. In addition learning has moved the concept of teaching from "know all" to "know how" (Jones et al. 2001). In recognition of these changes medical education in Australia has undertaken a major overhaul of the delivery of education and selection of students. More changes are to come with the introduction in the next few years of seven new medical schools around the country (Lawson et al. 2004). Clearly there are deficits in the delivery of oncology education, but there are also some exciting opportunities and resources with which to correct these deficits in Australia over the next decade. But how do we best make use of these opportunities?

Identification of the issues

There are many groups in oncology education, each with their own specific complexities. Each group has something to offer as well as something to gain via an improvement in oncology education in Australia. Who are some of the stakeholders?

Academia

'It is easier to win a war than to change a medical curriculum by even one half hour' (Chester TE 1975, reported in Kamien 1993). A survey of clinical oncologists and clinicians responsible for cancer teaching in Australian medical schools (Tattersall et al. 1993) indicated that some of the bias and misinformation detected in student's experience/knowledge[1] may be attributed to attitude, knowledge and differences of opinion of the teachers. These authors stated that the curriculum in many Australian medical schools did not reflect the views of cancer teachers but the entrenched attitudes of individual departments guarding their teaching time and turf (Tattersall et al. 1993). The change from didactic segregated teaching along departmental lines (ie. anatomy, physiology, pathology etc) to a faculty wide, problem-based approach constitutes a massive paradigm shift. One benefit from these changes has been that oncology can now be taught as an integrated subject rather than occupy (sometimes piecemeal) parts of other courses of study. Kamien (1993) states that the 'genius' of this change (describing McMaster Medical School) lies in "devising a system whereby the curriculum belongs to the school as a whole … it is controlled by an elected committee". Curriculum reform involves widespread changes and challenges to medical school faculties. It involves a chance to participate in the evolution of medical education locally through evaluation and utilisation of new pedagogic methods eg. portfolio learning (Finlay et al. 1998, Maughan et al. 2001), self-directed learning computer resources (Cameo B) and Building Partnerships Program (Boyle et al. 2002). It also affords the opportunity to align with other medical schools, share experiences, pool data and share resources. This has been the experience of the International Union Against Cancer (UICC) in Sao Paulo Brazil, which expanded successful interventions in oncology education from Sao Paulo throughout other parts of Latin America (Junqueira 2001). The possibility to expand beyond our national borders and help develop oncology education throughout the Asia-Pacific is an exciting possibility.

1 This report (Tattersall et al. 1993) followed a survey of graduating students/interns from all Australian medical schools (Smith et al. 1991) discussed earlier in this

Patients and Advocacy groups

Despite the recommendations, now almost 20 years old, that "In all Australian Medical Schools a compulsory course in oncology should be established. This topic should be examinable, and the presence of an appropriate course should be a requirement for an accreditation review", change seems to be slow (Tattersall 1999). The development of the Ideal Oncology Curriculum (Oncology Education Committee 1999) was made possible by the participation and advocacy of cancer patients. Their participation also ensures that the concerns of patients can be met through curricula review.

The nature of a student's clinical experience has changed, due to the success (in developed countries) of primary prevention and secondary intervention in cancer. This means that medical students in hospitals seldom palpate a breast cancer (Kennedy 1996). Many solutions have been put forward: increased primary care experience, portfolio learning[2] (Finlay et al. 1998, Maughan et al. 2001) and community partnerships[3] (Henry 1996). All three of these require the participation of the patient population and advocacy groups in order to succeed. This gives power to the patient as educator in this situation, as well as being an invaluable and (in the case of portfolio learning) an already proven method to increase the outcome of oncology education in the undergraduate curriculum (Finlay et al. 1998).

Patients can also share their experiences not only of a diagnosis of cancer, but their treatment both good and bad. This can be communicated directly to the medical community (Blennerhassett 1998, 2001) or to the general public (Hattenstone 1999, Miles 1995). Blennerhassett's (1998) personal account of anal cancer is one such example, accompanied by a response from Metcalfe (1998) which states that her (Blennerhassett's) experience can/should act as a catalyst not only to change undergraduate curricula, particularly with regard to communication skills, but also to change current practice. A feedback loop from the ultimate stakeholder, the patient, is central if difficulties such as those experienced by Blennerhassett are to be ameliorated (Jones et al. 2001).

Clinical educators/oncologists

Undoubtedly, "clinicians are our best asset" (Judy Searle, Dean of Medicine Griffith University Qld quoted in Lawson et al. 2004). However, they are also our most stretched resource: huge teaching loads, increasingly complex patient loads and their own continuing medical education must be attended to. More time for teaching means an increased staffing requirement and a higher premium put on time dedicated to teaching by hospital administrations.

Are doctors teachers? Although enshrined in the hippocratic oath, the willingness to teach does not necessarily translate into the ability; how able and equipped are medical practitioners to teach and are we doing much to help them? One example is the Teaching on the Run series (Lake 2004). In the editorial introducing this series Greenberg & Elliot (2004) state that the title highlights two causes of anguish among teachers: lack of time and lack of knowledge of teaching techniques.[4] It is interesting to note that one of the published desired learning outcomes of the Scottish Deans Medical Curriculum Group is Communicating as teacher (Simpson et al. 2002). This indicates the importance this group places on equipping future clinicians to be educators.

Students

Students surveyed in 1990 and 2001 showed that recent graduates actually had less exposure to cancer patients than those who trained 10 years ago (Barton et al. 2003). In particular, there is limited information about the place of palliative care in the undergraduate curriculum and what there is indicates that there may be deficits in Australia (Cairns & Yates 2003, Glare & Virik 2001).[5]

We need to ensure that students are adequately prepared and supported when dealing with issues about cancer, especially terminal cancer, as well as issues of loss experienced by patients during successful treatment of their cancer (Wear 2002). Metcalfe (1998) comments that some of the problems encountered by patients with cancer are due to the paucity of communication skills teaching, the lack of care of students' feelings when they have to confront severe suffering (so that they defend themselves by dehumanising the patient), inappropriate teaching of ethics and the elitism that characterises undergraduate medical education.

Medical students are starting their training at a later age and this often means they are also starting families at the same time (Kennedy 1997). This has implications for their willingness and/or ability to participate in "after-hours" teaching. It also means that they are, in general a student body with more experience both in the undergraduate experience and life in general. These students also have the ability and responsibility to perceive deficits in their education and lobby for changes. Indeed, an example of this has been reported, a student-run, faculty endorsed and supported, elective introduction to oncology exists in the US (Axelrod & Lowney 1993).[6] Selecting older students has been associated with graduates that are more likely to develop an "immune" professional persona (altruistic) when faced with the transition form preclinical to clinical curriculum (Coulehan & Williams 2003).[7] This hopefully translates into practitioners who are able to "survive" the grind of medical education with their altruism intact (Coulehan & Williams 2001).

A way forward?

Unification across the above groups of people is the key to making gaps known and developing as well as implementing a solution. This is beginning to happen as can be seen by

2 Portfolio learning in this context involves following a patient with cancer and their family over 6-12 months supported by regular tutorials and as part of a larger oncology curriculum. Students record triggers to learning including medical history and a diary of interaction with patient and family including reflection (Maughan et al. 2001).

3 Community partnerships aim to enhance education by moving students out of hospitals and into the community. The structures which formalise this partnership between academia and community are committees, with members form the academic institution, community centre and members of the community itself (Henry 1996).

4 This series is not without its critics, in response to the series Majoor and Ibrahim (2004) state that the idea that "any" education will do, and that "anyone" can teach, remains pervasive. The danger of promoting "teaching on the run" is to reinforce the view that teaching is not a specialised discipline that requires specific skills and training.

5 Due to word limitations I have not included much of the high-quality research on education in palliative care specifically.

6 An example from palliative care is Stanford University's student developed end of life care curriculum module (Magnani et al. 2002).

7 Also associated with the immune persona are students who have received a biopsychsocial education, and female students (Coulehan & Williams 2003).

Articles

the make-up of The Cancer Council's Oncology Education Committee. However, there seems to have been a patchy participation in Australian medical schools of the proffered solution. It has been recently suggested that, for a number of reasons, a national exit exam should be considered for all Australian medical school graduates to ensure standardisation and a basic minimum requirement for hospital practice and internship (Koczwara et al. 2005). An exit exam is one way of ensuring that the message gets through to both medical schools and students alike that there is an expected minimum standard that must be reached. It is imperative that the Oncology Education Committee lobbies for a place at the table should the idea eventuate. Another advantage of an exit exam would be the possibility to evaluate different undergraduate curricula over time and between Australian medical schools with outcomes.

The term "outcome-based" was coined by Donabedian, who developed a paradigm for quality assessment, comprising structure, process and outcome. He recognised that, while some outcomes (such as death) might be easily recognised and measured, others were not. Among the latter he included "patient attitudes and satisfactions, social restoration and physical disability and rehabilitation". Donabedian suggested that "outcomes by and large, remain the ultimate validators for the effectiveness and quality of medical care" (quoted from Jefford et al. 2003).

According to McNeir (1993) outcomes in education should be broad in vision but specific enough to be taught and measured effectively. Outcomes education is an effort to overcome a situation of inappropriate and excessive testing, unnecessary surgery, a proliferation of medical error and the systematic undervaluing of the humane, holistic and affective components of medicine in favour of the technical, reductionistic, and invasive features (Coulehan & Williams 2003).

Tamblyn et al. (1998) have used outcome research to determine that those who performed better on a standardised patient licensing examination correlated with improved practice patterns, such as appropriate mammographic screening, suggesting that education may be an independent variable in cancer treatment outcomes (Sloan 2000). Such studies as University of Kentucky prospective randomised trials allow us to hypothesise that cancer education can be regarded as an important cancer treatment variable (Sloan 2000).

There are difficulties; Norman (2002) identified three main difficulties in implementing outcome-based research in medical education:

a) real differences in educational strategies may not be reflected in outcomes, such as licensing examination performance, simply because students are highly motivated and not blinded to the intervention, so will compensate for any defects in the curriculum;

b) a curriculum contains many components, delivered with variable quality by different teachers; and

c) time between learning and important outcomes may be so long that the effects of the curriculum are obscured, although not always (Norman 2002). Additionally randomisation, control of variables and choice of appropriate outcome measures (appropriate for the intervention) are all difficult to optimise.

Outcomes-based education has the additional attraction of being able to actively involve all the above mentioned stakeholders as well as government and the wider community. In Australian oncology education we have the benefit of knowing the current level of student competency. Indeed, it has been seen to improve in some areas and decline in others (Tattersall & Langlands 1993, Tattersall 1999, Tattersall et al. 1998, 1993, Barton & Simons 1999, Barton et al. 2003). The Cancer Council Oncology Education Committee has suggested a way forward. Is it time to test it? Could we implement the Ideal Oncology Curriculum state and/or nationwide and test its utility? The benefits of outcomes education is that it can be used as encouragement to implement change as well as a way to continually improve and update the curriculum as changes in the field (both oncology and education) occur.[8]

Two important elements need thorough exploration before this could be attempted. Firstly, desired outcomes in oncology must be well defined. In the 1998 Shattuck lecture, Ellwood (1998) outlined outcomes management and the idea that cost (time, money, suffering, undergraduate medical education curriculum hours) can be plotted against benefit (lives saved, early detection, pain averted etc.) and that there is a hyperbolic relationship.[9] We should, especially in an overcrowded undergraduate medical curriculum, be aiming to get the greatest benefit from our interventions. Prevention and detection are the obvious candidates in oncology education but more generally, interventions aimed at improving communication skills, examination proficiency, pain management skills and evidence-based medicine competency[10] would also be candidates. The second and perhaps more difficult issue is how and when to measure specific outcomes which require active participation of all stakeholders and has yet to be clearly defined in the literature (Prideaux 2002).

Outcomes-based education is one possibility for the future of oncology education in Australia, but it should not be used in isolation; qualitative investigations of educational interventions are also invaluable for informing curriculum development (Hays et al. 1988, Sanidas et al. 1993, Wilkerson et al. 2002). This is particularly well done in the specialty of palliative care (Oneschuk 2002, Lasch et al. 2002, Flaherty et al. 2002, Lloyd-Williams & Dogra 2003, Llyod-Williams & Dogra 2004, Shapiro 2002, Wear 2002 and Weinstein et al. 2000).

Oncology education in Australia is currently in a position where the necessary characteristics to implement outcomes based educational interventions in cancer curricula are all present. We have the knowledge and personnel-base to ensure ongoing improvement, and in the future this may be realised as improved outcomes for patients. Oncology in Australia is in the position to lead the future of medical education generally, but could also effect change in our region. We have the funds and expertise to optimise oncology education and in the future the resources with which to help those in the Asia-Pacific.

"To leave education unused as an instrument for change would constitute a disservice to society in general and to our patients in particular." (Sloan 2000).

*This article is the winning essay in The Cancer Council Australia's student essay competition. As the winner, Jennifer Anderson attended the World Health Organisation's Collaborating for Cancer Education's "Oncology for Medical Students" summer school.

8 It can also help avoid "curriculum drift" (Jones et al. 2001).

9 i.e. relatively simple low-cost interventions have the greatest gain in outcome: the steep part of the curve. At the plateau large costs bring marginal benefits.

10 All of these are encompassed by the ideal oncology curriculum (oncology Education Committee 1999).

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Note from Editorial Board: the referencing in this article is not consistent with Cancer Forum style, however it has been accepted on the basis of an undergraduate essay.

REPORTS

Australian Behavioural Research in Cancer

Correction to last edition

A Research in the Pipeline item titled Comparing GPS and accelerometer counts, that was reported under CBRC (Centre for Behavioural Research in Cancer, Vic) in the July 2005 issue (Vol 29,(2)), is actually research to be carried out by the CPRC (Cancer Prevention Research Centre at The University of Queensland).

New Results

n Cancer Prevention Research Centre (CPRC), Qld

PLACE (Physical Activity in Localities and Community Environments) Report

An account of the spatially based survey methods used in the PLACE project and the recruitment outcome has been published on the CPRC and International Physical Activity and the Environment Network (IPEN) websites. This report aims to make the project experience available to others planning similar studies and includes details of how objective measures of the environment were constructed using Australian data sets. The Report can be viewed at http://www.uq.edu.au/cprc/index.html?page=35080 or http://www.ipenproject.org/place.htm

n Centre for Behavioural Research in Cancer (CBRC), Vic

Australian Letters to the Editor on tobacco: triggers, rhetoric and claims of legitimate voice

Kim McLeod and Melanie Wakefield (The Cancer Council Victoria) along with Katherine Clegg-Smith (from John Hopkins University) have explored the arguments and ideologies relating to tobacco issues present in Letters to the Editor (LTEs) in Australian newspapers and the ways in which letter writers engage with, and contribute to, the public discourse about tobacco. Ethnographic content analysis was used to explore the content and framing of 361 LTEs on tobacco issues from a sample of 11 Australian daily newspapers from 2001-2003. 61% of letters expressed clear support for tobacco control objectives, 25% were oppositional and the remaining letters were mixed or unclear. The most prominent tobacco-related issue in the letters was secondhand smoke. Both supporters and opponents of tobacco control worked to create a legitimised voice on tobacco by claiming authority on the basis of their smoking status. The Australian Government's reliance on tobacco taxes was used to support opposing arguments about tobacco regulation. Letter writers used strong language, poignant stories and emotional illustrations in support of their position on tobacco use. LTEs can serve as a barometer of public reaction and deeper discourses about controversial or unfolding tobacco control issues. This paper is in press in Qualitative Health Research.

An experimental study of effects on school children of exposure to point-of-sale cigarette advertising and pack displays

Melanie Wakefield, Daniella Germain and Sarah Durkin, in collaboration with Lisa Henriksen (at Stanford University), assessed the potential effects of retail cigarette advertising and cigarette pack displays on youth perceptions of ease of access to cigarettes; perceived peer approval of smoking; perceived prevalence of youth and adult smoking; perceived harm from tobacco and popularity of cigarette brands. Five hundred and eighteen Year 9 school students were randomly assigned to view one of three photographs of a convenience store point-of-sale area. These photographs depicted a store with either: a) no visible tobacco products; b) a cigarette pack display at the point-of-sale; or c) both tobacco advertising and a cigarette pack display at the point-of-sale. Compared with students who viewed the store with no visible tobacco products, students either in the display only condition or cigarette advertising condition thought it would be easier to purchase tobacco from these stores and that they would be less likely to be asked for proof of age if they tried to buy. Students who saw the display only condition were more likely to recall cigarette brands that were displayed, than those who saw no tobacco products. Cigarette advertising similarly influenced students' recall of brands, and among those who had tried smoking, also tended to weaken students' resolve not to smoke in future. These findings strengthen the case for placing cigarettes out of sight in the retail environment. The paper is under review at a journal.

Evaluation of a strategy to increase cervical screening through the use of personalised letters

Robyn Mullins has completed research to determine whether there was any benefit in sending personalised invitation letters to unscreened and under-screened women aged 50–69, in terms of them attending for a Pap test. In particular, the study aimed to determine whether the use of PapScreen Victoria (PSV) or The Cancer Council Victoria (TCCV) letterhead, or the use of gain-framed or loss-framed messages, prompted different Pap test attendance rates.

The Victorian Electoral Commission gave permission to access the names, addresses and dates of birth of Victorian women aged 50 to 69 years old. These details were matched against details held by the Victorian Cervical Cytology Registry (VCCR). Women in this age group, who had no record of having had a Pap test in the past three years and no record of having had a hysterectomy, were sent one of four versions of a letter inviting them to attend for a Pap test. There were 186,109 letters sent between August 2003 and February 2004.

Three thousand randomly selected women were tagged for evaluation purposes – 750 from each of the four intervention groups. The overall attendance for a Pap test was 3.2% after three months and 5.1% after six months. Slightly more women who received the PSV gain-framed letter had taken action after three months than any other group, but there was no significant difference for either the PSV letterhead compared with TCCV letterhead or for the gain-framed letter compared with the loss-framed letter at either three or six months. The response rate to the letter could be as high as 12.2%, if women who have had a hysterectomy are excluded from the denominator, but this would also indicate that a large number of letters were sent to women who did not need a pap test.

Within six months of receiving the letter, up to 12.2% of unscreened and under-screened women had a Pap test, but as there was no control group, this cannot be attributed entirely to the letters. Neither the different letterhead nor the way in which the letter was framed made a significant difference to the outcome. Because the VCCR does not have complete records of women who have had hysterectomies, it is inevitable that in any direct mail campaign, a large number of women will unnecessarily receive an invitation letter. This number needs to be balanced against the benefits of reaching some otherwise hard-to-reach women when determining whether to run a direct mail campaign. Full study details are available on the CBRC website as part of our Research Paper Series.

n Centre for Behavioural Research in Cancer Control (CBRCC), WA

Perception of cancer survivability study

People's decisions about whether to participate in cancer screening and to seek treatment are related to their perceptions of the survivability of cancers. A total of 1501 randomly selected Western Australians were interviewed to assess their perceptions of the survivability of breast, cervical, prostate, melanoma, lung, and stomach cancers. It was found that participants' rankings of the relative survivability of these cancers were surprisingly consistent with cancer registry data. Estimated five-year survival rates for breast, cervical and prostate cancers were also quite accurate. However melanoma survival rates were underestimated by 20% and lung and stomach cancers were substantially overestimated by 38% and 43% respectively. Public education regarding the very low survival rate of lung cancer may therefore provide novel motivation for smokers to quit, or non-smokers not to start. Conversely, education regarding the high survival rates of other cancers, such as melanoma, may have the potential to reduce fears and to promote earlier and greater presentation in cancer screening. The results are published in the Health Promotion Journal of Australia, 16, 124-8.

Bowel cancer appeals for promoting physical activity

The potential efficacy of bowel cancer prevention messages to increase intentions to be more physically active were investigated with a convenience sample of 281 physically inactive persons aged 30-60 years, by Mr Geoffrey Jalleh and Professor Rob Donovan. Half of participants read a booklet containing information about the benefits of physical exercise in reducing the risk of bowel cancer and half a booklet linking it with reduced risk of cardiovascular disease. The perceived believability of both messages was high but the perceived personal relevance and stated intention to be more physically active as a result of the information was substantially lower for bowel cancer than cardiovascular disease. Nonetheless, two-thirds of respondents in the bowel cancer condition had increased intention to increase their level of physical activity, providing support for the potential efficacy of promoting physical activity in reducing the risk of bowel cancer. The results have been published in the Health Promotion Journal of Australia, 16, 107-9.

n Centre for Health Research & Psycho-oncology (CHeRP), NSW

NSW community smoking survey

The first of The Cancer Council NSW biennial surveys tracking community attitudes and practices in relation to smoking was conducted during October-December 2004. A total of 3503 interviews were conducted with randomly-selected NSW residents.

Community views towards environmental tobacco smoke in various settings (eg. cars, homes, bars, hotels and workplaces) demonstrate that the community is strongly supportive of smoking bans. For example, more than 75% of respondents had complete bans on smoking in their homes or cars and almost half thought that the NSW Government should introduce the ban on smoking in pubs and clubs immediately. The majority of participants also supported a ban on smoking on beaches and in outdoor dining areas.

Community views were also strongly supportive of greater use of tobacco taxes for anti-tobacco campaigns and strongly opposed to superannuation funds investing in the tobacco industry.

More than one-third of people reported that in the past week they had often or sometimes seen TV shows where someone was smoking. The majority (59.1%) of respondents who saw at least one movie, video, or DVD in the previous three months thought it was very likely or likely that the tobacco industry had a role in the amount of smoking portrayed in those movies.

The study also included a range of items relating to smoking patterns and quitting behaviours.

n The Viertel Centre for Research in Cancer Control (VCRCC), Queensland Cancer Fund, Queensland

Queensland Cancer Risk Study

The Queensland Cancer Risk Study is the first comprehensive, state-wide survey of cancer risk factors, cancer screening activity and knowledge and attitudes towards cancer in Queensland. The objectives of the study, which included 9419 residents of Queensland, were to describe the distribution of behavioural risk factors for cancer in the Queensland population (including smoking, alcohol consumption, diet, physical inactivity, overweight, sunburn, sun protection and solarium use) and to investigate the determinants of these behaviours. Early results show that the prevalence of risk factors for cancer among Queensland adults is high. Many cancer risk behaviours are more prevalent among men, those aged 20-39 years and those living in remote/very remote areas of Queensland. For example, when compared to women, men are more likely to smoke on a daily basis, drink alcohol regularly, drink alcohol in excessive quantities, eat less than two serves of fruit a day, eat less than five serves of vegetables a day, be overweight or obese and to have been sunburnt or severely sunburnt at least once in the past 12 months. In contrast, women are more likely than men to be inactive and to use solaria. Overall, the results suggest that there is scope for improvement in regard to cancer risk behaviours for the majority of Queensland adults and particularly within groups with multiple cancer risk behaviours including men, younger Queenslanders and residents of remote/very remote areas

Non-cancer causes of mortality among cancer survivors

Do people diagnosed with cancer have an increased risk of death from non-cancer causes compared to the general population? This study was based on analysis of the non-cancer mortality of people diagnosed with cancer in Queensland and who were prevalent cases at any time between 1993 and 2002, utilising data from the Queensland Cancer Registry and the Registrar of Births, Deaths and Marriages. Among all cancer patients combined, there is a significantly increased risk of non-cancer death compared to the general population. In subgroup analysis, melanoma patients have significantly lower non-cancer mortality compared to the general population,

while lung cancer patients had the highest risk of non-cancer mortality. Future work will investigate the causes of non-cancer mortality among cancer survivors. A manuscript has been accepted for publication in Cancer Causes and Control.

Research in the Pipeline

n CPRC

International Physical Activity and the Environment Network

IPEN is the International Physical Activity and the Environment Network. It was launched by Professor Jim Sallis (USA), Dr Ilse DeBourdeaudhuij (Belgium) and Professor Neville Owen (Australia) at the International Congress of Behavioral Medicine in Mainz Germany in August 2004. IPEN has 168 members from 28 countries. The network aims to:

- increase communication and collaboration between researchers investigating environmental correlates of physical activity;
- stimulate research in physical activity and the environment;
- recommend common methods and measures;
- support researchers through sharing of information, feedback, letters of support etc;
- bring together data from multiple countries for joint analyses; and
- aid in the publication of data through papers, special journal issues, symposia etc.

Neville Owen with the other members of the IPEN consortium have assisted the Danish Cancer Society with preparation of a research grant application on the effects of environmental physical activity in Denmark. A research grant is also under review in Belgium to replicate the PLACE study that CPRC has recently completed in Adelaide and a collaborative studying Japan with Tokyo Medical University is in progress.

The IPEN website is http://www.ipenproject.org/index.htm.

n CBRC

How acceptable is a referral and telephone-based out-call program for men diagnosed with cancer?

Trish Livingston along with Vicki White, Jane Hayman, David Hill and other colleagues have studied the feasibility and acceptability of a referral and out-call program from a telephone-based information and support service, for men newly diagnosed with colorectal or prostate cancer. Patients were referred to the Cancer Information Support Service (CISS) through clinicians at diagnosis. Clinicians were randomised into one of three conditions.

Active referral 1: specialist referral with four CISS out-calls: (a) £1week of diagnosis, (b) at six weeks, (c) three months, and (d) six months post-diagnosis.

Active referral 2: Specialist referrals with one CISS out-call £1 week of diagnosis.

Passive referral: specialist recommended patient contacts CISS, but contact at the patient's initiative.

Patients completed research questionnaires at study entry (before CISS contact) then four and seven months post diagnosis.

Six clinicians referred 112 patients to CISS and 100 (89%) agreed to participate in the research. One-third of participants were allocated into each referral condition. The average time taken for Active 1 calls was 17.15 minutes and Active 2 calls 24 minutes. Nine (28%) participants in the Passive Referral group called CISS and their calls lasted an average of 25 minutes. Eighty-five per cent of participants completed the seven month survey and of these 96% reported a positive experience with the referral process. The most common theme expressed was that the referral was a good idea because of the shock of being diagnosed with cancer. Of men in Active 1 and 2 conditions 93% thought it was helpful to talk to someone. Of men in the Active referral groups 87% reported they were not concerned about receiving the calls and 84% indicated the timing of the calls was helpful.

This research is ongoing however this preliminary analysis suggests that the referral and out-call program was achievable and acceptable for men newly diagnosed with colorectal or prostate cancer.

n CBRCC

National audit of Quit research 1997-2005

Under the auspices of the National Quit Coordinators group, CBRCC has received over 300 mainly unpublished research reports from the Quit offices of all states of Australia from 1997-2005. Analysis is currently underway with the aim to update knowledge of effective communications strategies on smoking cessation, assess whether there is a need to revise the communications model developed as an outcome of the National Tobacco Campaign review, and identify possible themes, issues and approaches that might inform future campaigns. Results will be presented on the Wednesday the 23rd of November by Dr Owen Carter at the 3rd Tobacco Control Conference to be held in Sydney this year.

n CHeRP

The partners and caregivers study: a longitudinal study of the psychosocial outcomes of the partners and caregivers of cancer survivors

Cancer is one of the most common health conditions in receipt of informal care. With the primary setting for the delivery of care to cancer patients having shifted from the hospital to the home, more emphasis is placed on the care provided by the patient's informal caregiver, usually their spouse or a family member. Evidence suggests that caregivers of cancer patients are at-risk of experiencing anxiety, depression, distress, poor quality of life, poor physical health, and increased financial pressure. Whilst there is published evidence indicating the significant health and financial impact of caring, no previous research has reported on the longitudinal impact for partners and caregivers of cancer survivors.

A longitudinal population-based study of cancer survivors (the Cancer Survival Study) is currently being undertaken in NSW and Victoria. CHeRP will be conducting the Partners and Caregivers Study in parallel with the Cancer Survival Study, recruiting the partners and caregivers of the cancer survivors. The partner or caregiver will be invited to complete a survey at baseline (six months post-diagnosis of the cancer survivor), 12 months, two years, three years and five years post-diagnosis. The study will identify changes in the levels of distress, anxiety, depression, quality of life and unmet needs over the first five years since the cancer diagnosis. The personal factors such as social support, coping style, personal characteristics, work and financial situation associated with these outcomes will also be identified. The study will provide information on the costs associated with living with or caring for a person with cancer and how this changes over time. Using data from both cancer survivors and their partners and caregivers, the inter-relationships between the cancer survivors' and their partners' and caregivers' psychosocial and other health outcomes will be described. For more information, please contact Professor Afaf Girgis or Fiona Stacey.

n VCRCC

Queensland 'Pool Cool' pilot study

Few skin cancer prevention programs in outdoor settings, particularly public outdoor swimming pools, have been evaluated in controlled trials. Because children, families and aquatics staff in Queensland spend many daylight hours exposed to the sun while minimally clothed, sun protection education at swimming sites can significantly affect important preventive behaviours. This study will pilot test the Pool Cool intervention program, originally developed by Professor Karen Glanz, that has been successful in the US in improving skin cancer prevention strategies at swimming pools. Pool Cool was designed to encourage sun safety at pools in Hawaii and Massachusetts and to increase environmental supports and policies for skin cancer prevention. The main objective of the Queensland Pool Cool pilot study is to increase awareness, motivation and sun protection practices among children aged 5-10 who take swimming lessons, their parents, pool staff (lifeguards, pool managers and swim instructors) and other pool users attending council and private pools in the Brisbane and Townsville areas. This pilot study will be completed over the summer of 2005-2006.

Health and disability of cancer survivors

Data from the 2001 National Health Survey will be analysed to assess the health of persons diagnosed with cancer against the rest of the population to estimate the burden of cancer within the population. Measures used will include self-assessed health status, quality of life, number of days out of usual role during the past fortnight, mental well-being and health behaviours. Analyses will be undertaken by cancer status, currency of cancer and type of cancer, with adjustments made for selected co-morbidities and risk factors such as alcohol consumption, smoking and body mass index.

News

n CPRC

New Staff

The Centre is pleased to announce the arrival of six new staff members - Dr Corneel Vandelanotte, Associate Professor Elizabeth Eakin, Ms Kirsty Pickering, Ms Lisa Jordan, Ms Melissa Harvey and Ms Loraine Caesar. Welcome to all!

Corneel Vandelanotte joined the Centre in July 2005 as a Research Fellow. Corneel is a physical educator with a PhD in computer-tailored interventions for increasing physical activity and decreasing fat intake from the University of Ghent in Belgium. His research is on psychosocial and environmental determinants of physical activity, on computerised and web-based interventions for increasing physical activity and on methodological issues related to the measurement of physical activity and environmental determinants of physical activity. Corneel is an investigator on the NHMRC program grant in physical activity and population health.

Elizabeth (Liz) Eakin started as Principal Research Fellow in October and joins Neville Owen, Centre Director, as a senior academic to help provide leadership to the CPRC. Liz is a behavioural scientist who, over the past 15 years, has built a program of research in health behaviour interventions across the chronic disease prevention and management spectrum. Her work emphasises interventions with broad population reach (ie. telephone, tailored print and internet), targets at risk subgroups (ie. older adults with multiple chronic conditions, people from low SES backgrounds), and takes place in community as well as primary health care settings. Liz will bring two currently funded grants with her: a NHMRC Career Development Award in Population Health and a NHMRC Project Grant: Linking General Practice and Community Care to Promote Health Behaviour Change (Logan Project).

Kirsty Pickering, Project Manager, Melissa Harvey and Lisa Jordon, Telephone Counsellors and Lorraine Caesar, CATI interviewer, are all Logan Project staff making the move with Liz. The Logan Project is evaluating a telephone and print delivered physical activity and diet intervention targeting patients with type 2 diabetes and hypertension recruited from general practices.

Conferences

Neville Owen

- Walk 21 Satellite Symposium held 18-21 September 2005 in Magglingen Switzerland and the 6th International Conference on Walking in the 21st Century held 22-23 September 2005 in Zurich Switzerland. Presentation Titles:- Understanding and Influencing Physical Activity to Improve Health Outcomes (Plenary), 'Using Geographic Information Systems To Identify Environmental Correlates Of Walking, IPEN-International Physical Activity and the Environment Network.
- American College of Sports Medicine – Walking for Health: measurement and research issues and challenges held October 13-15 2005 in Urbana-Champaign, Illinois, USA. Presentation Title: Assessing Walkability of a Community or Neighbourhood.

Ester Cerin and Corneel Vandelanotte

- Sports Medicine Australia – 5th National Physical Activity Conference 'Physical Activity Interventions: Promoting Innovation, Measuring Success' held 13-15 October 2005 in Melbourne. Presentation Titles: Dr Cerin – Relationships between measures of land use and walking for transport in the PLACE study. Dr Vandelanotte – Efficacy of a computer-tailored intervention for increasing physical activity in a sequential or simultaneous intervention mode.

Liane McDermott

- Queensland Tobacco Control Symposium held 14 July 2005 at the Queensland Cancer Fund. Presentation title: Alcohol and Social Settings: Tempting Young Women to Smoke.
- 3rd Australian Tobacco Control Conference 2005 held 23-25 November, 2005 in Sydney. Presentation title: Descriptive Epidemiology of Cigarette Smoking Among Women in Young Adulthood.
- CBRC

The Centre for Behavioural Research in Cancer has welcomed Belinda Cerritelli as our new Research Projects Manager. Belinda has an honours degree in Psychology and she has been involved in a range of research programs and health promotion interventions over the past seven years. She has previously worked in the fields of parental smoking cessation, asthma, anorexia nervosa, cystic fibrosis and heart disease.

CBRC has also welcomed Sally Dunlop who is currently undertaking a PhD with supervision from Yoshi Kashima from the University of Melbourne and Melanie Wakefield. Sally's PhD is funded by an ARC linkage grant and is exploring

"Narrative social influence: Narrative as an effective method of public health campaigning".

n CBRCC

Healthway Tobacco Control Research Fellowship
2006-2010

CBRCC was recently awarded a five-year tobacco control research fellowship from Healthway to commence in 2006. Dr Owen Carter will be the recipient of this fellowship, under the supervision of Professors Rob Donovan and Michael Daube from Curtin University and Ms Denise Sullivan from The Cancer Council WA. The fellowship will encompass: advocacy for legislation and policy change; development, implementation and evaluation of prevention and cessation campaigns; cessation courses; and tobacco industry and related health industry monitoring.

n CHeRP

The following grants and consultancies have been awarded:

1. Girgis A, Neil A, Stojanovski E. The Partners/Carers Study: A longitudinal study of the psychosocial outcomes of the partners/carers of cancer survivors. The Cancer Council NSW, 2005-2011, $255,800.74.
2. Girgis A, Boyes A. Evaluation of The Cancer Council Helpline. The Cancer Council NSW, 2005, $20,000.
3. Girgis A, Butow P. Development of Consumer Review Criteria for Rating Research Protocols. The Cancer Council NSW, 2005, $30,500.
4. Girgis A, Butow P. Communicating effectively with younger women with breast cancer. National Breast Cancer Centre, 2005, $10,000.

Dr Jiong Li who has been with the Centre since March 2004 has moved on from CHeRP. Dr Li worked on a number of initiatives, including preparing a manuscript reporting the comparison of the psychosocial needs of patients with lung cancer to other patients with cancer. This work has recently been published in Psycho-Oncology. Dr Li has recently taken up a position as Epidemiologist at the National Centre in HIV Epidemiology and Clinical Research at St Vincent's Medical Centre in Sydney. We wish him success in his new position.

Amy Waller has come on board as a PhD student. Amy will work with Professor Afaf Girgis on pilot testing and evaluating a palliative care referral screening tool, as part of a comprehensive program of work in this area which has been funded by the Australian Government Department of Health and Ageing.

n VCRCC

Approximately 60 Queensland health professionals attended the second Queensland Cancer Fund Tobacco Control Symposium on 14 July to hear about the array of tobacco control research and innovative program developments currently underway in Queensland. The symposium presented an opportunity for professionals to meet and network while enjoying an overview of tobacco control initiatives being conducted across Queensland. The symposium was attended by a range of health professionals from government, universities, hospitals, worksite and school settings.

Cancer Trials Database Victoria – first of its type in Australia

Susan Fitzpatrick

Centre for Clinical Research in Cancer and Victorian Cooperative Oncology Group

The Cancer Council Victoria

The Cancer Trials Database Victoria was launched on Daffodil Day, 19 August 2005.

Why a state-based cancer trials database when the National Clinical Trials Register had been announced?[1] The genesis for a trials database for Victoria goes back a few years. However, its development had been deferred due to a national register proposal, as it was decided not to duplicate effort. In 2004, with repeated calls from clinicians and patients for trials information online, and still no register in place at a national level, The Cancer Council Victoria decided to develop the Cancer Trials Database Victoria. This database provides a reliable online resource of collaborative group cancer trials for both health professionals and the community.

It is known that clinical trials are essential for improving cancer outcomes but progress is hampered by low participation rates. Whilst Victoria has an adult participation rate of approximately 6%[2], the aim is to have 10% of all eligible adult patients participating in cancer trials.

There is evidence that insufficient resources and lack of awareness are major barriers to increased participation in clinical trials. To address these barriers, The Cancer Council instituted the Cancer Trials Management Scheme[3] in 1988, awarding grants toward the appointment of trial managers in Victoria's cancer centres, and then in 1991 published a clinical trials information booklet.[4] Both these actions have significantly contributed to raising clinical trial participation. Increasingly, however, clinicians and patients have been seeking an online resource of more specific information about clinical trials open to participation.

The aim of the Cancer Trials Database Victoria is to improve access to information about cancer clinical trials for health professionals and the community.

The database has proved immediately useful to clinicians in identifying suitable cancer trials for their patients and enabled patients to approach their clinicians about potential trial participation. It is a "one-stop" site listing 60 state/ national/ international collaborative group phase 2 and 3 trials open to patient recruitment at treatment centres in Victoria. The database eliminates the effort of searching multiple individual websites. Direct links to the collaborative groups are also available if additional information is required.

It is acknowledged that the Cancer Trials Database Victoria does not fulfill the criteria of a register as defined in the Statement of the International Committee of Medical Journal Editors 2004.[5] It is not meant to. The database does not require a unique registration number. The Victorian database could be considered a state-based cancer trial supplement to the National Clinical Trials Database. Other states may consider adopting a similar model.

In the development process, permission was obtained from the collaborative trial groups to list their trials on the online database and to include website links. Using the 2004 Cancer Trials Management Scheme annual reports, information on which centres were participating in which trials was sourced and confirmed. Permission was obtained to provide links to participating site websites. The details for each trial was sourced from the collaborative group trial coordination centres and their websites.

The database is easily navigated. It is searchable by cancer type and/or phase, location (treatment centre), or keyword. This enables a specific or broader search to be conducted. The details include: protocol title, phase, protocol ID, description, summary, aims, outcomes, eligibility, collaborative group, principal investigator, accrual target, anticipated closure date, location and access to further supplementary information. Trial details will be updated twice yearly and an online notification system for collaborative groups and/or participating centres to list new trials and/or participation in a current trial is in development. Consideration is also being given to expanding the database to include industry phase 2 and 3 multi-centre trials in 2006.

Over 3500 hits to the online Cancer Trials Database Victoria had been recorded by the end of the first week of activation. Clinicians, researchers and the community have commended its establishment. To quote one clinician: "As a clinician, this database quickly and easily provides up-to-date information about cancer trials that previously would have taken considerable time to source from many different areas. This will be of great benefit to cancer specialists when considering the best available treatment for their patients."

The Cancer Trials Database Victoria is accessible at www.cancervic.org.au/trials.

Acknowledgement: The Cancer Council Victoria's Centre for Clinical Research in Cancer (Leigh Williams, Noellyn Ngo, Gerry Hall and Aimie Trikojus) and Publications Unit (Stephen Cheshire), and Trial Coordinators in Victoria's cancer treatment centres.

1 National Clinical Trials Register, announced by Minister for Health and Ageing, 17 May 2005

2 Cancer Trials Management Scheme, Annual Review 2004, The Cancer Council Victoria.

3 Cancer Trials Management Scheme 2005, grants totalling $750,000 awarded to 18 cancer centres.

4 Cancer Trials: information for people having cancer treatment – www.cancervic.org.au

5 Editorial – Clinical Trial Registration: A Statement from the International Committee of Medical Journal Editors - www.icmje.org/clin_trial.pdf

Cancer Institute Nsw Standard Cancer Treatments (CI-SCaT)

Jen Bichel-Findlay

Standard Cancer Treatments Program
Cancer Institute NSW

In order to deliver optimal treatment to cancer patients, oncology clinicians need to have a full understanding of contemporary literature, key evidence and internationally acceptable standards. Each hospital currently writes, reviews and updates standard treatment protocols for cancer patients. This requires expert and detailed attention, drawing considerable resources away from treating patients. Regional services typically lack the specialist expertise and resources to maintain currency across all protocols.

The Cancer Institute NSW has launched an evidence-based Standard Cancer Treatments (CI-SCaT) website for all those involved in cancer services, including patients, carers, cancer practitioners, medical officers, nursing staff, pharmacists and general practitioners throughout Australia and New Zealand. Professor Robyn Ward developed the website at St Vincent's Hospital, Sydney, with the Cancer Institute (NSW) assuming responsibility in October 2004. Whilst the program is not intended to replicate or replace the knowledge, skills, experience, or clinical judgement of experienced health professionals, it provides specialist clinicians and general practitioners with direct access to best-practice treatment for a variety of cancer types.

Access

The site can be accessed via the:

n Internet
www.treatment.cancerinstitute.org.au

n Cancer Institute website
www.cancerinstitute.org.au

n NSW CIAP
http://internal.health.nsw.gov.au:2001/ or www.ciap.health.nsw.gov.au
[Access the left-hand menu, and select the Clinical Resources\ Specialty Websites\ C\ Cancer option]

The entire site, apart from the drug calculator, is accessible without a password. Those clinicians who need to calculate drug doses are encouraged to apply online for access to the drug calculator function. Individual patient details such as Body Mass Index, Ideal Body Weight, Surface Area, Corrected Calcium and Creatinine Clearance are all calculated, with doses based on surface area, weight, and the Calvert Carboplatin formula calculated for each protocol.

Clinician benefits

CI-SCaT presents detailed cancer treatment protocols that are designed to provide guidance in the treatment of cancer. It is anticipated that over 200 protocols will be available by December 2005. The information contained in a treatment protocol may include some or all of the following:

n Name of the protocol
n Indication for use
n Usage
n Drug dosages
n Frequency
n Number of cycles

- Pre chemotherapy considerations
- Indications for dose modifications
- Administration
- Pre-medications and post-medications
- Special clinical instructions
- Key study or evidence and journal reference
- Comparative efficacy
- Comparative toxicity
- Drug side effects
- Interactions
- Nursing procedures
- Resource groups

Approval process

There are three categories of protocols – approved, unapproved and superseded.

Unapproved

Existing protocols are identified and prepared as a draft document by Cancer Institute project staff. These unapproved protocols are reviewed and edited by the project staff and a reference group member prior to a meeting. At the meeting, all members discuss the protocols in detail and a consensus decision is made as to whether to approve, approve with changes, or send back for further development.

Approved

Approved protocols are signed off by a medical specialist and made available. The date each protocol was approved is located at the end of each treatment. It is anticipated that an annual review of all protocols will commence in 2006.

Superseded

As new information becomes available, the reference group recommends that some protocols become superseded. In other words, key evidence indicates that another protocol is demonstrated to be superior (in the majority of patients) in relation to outcomes such as less toxicity, less serious adverse events and improved survival. The information contained in these protocols justifies why they are not recommended. They are clearly marked as superseded, but remain for historical reference and for the rare occasion that they may need to administered.

Future plans

In the future, there are plans to expand the resources to include information on:

- Palliative care;
- Paediatric;
- Bone marrow transplant;
- Melanoma;
- Dose modification;
- Surgical pathways;
- Radiotherapy pathways; and
- Links to a resource directory.

CI-SCaT contact

The CI-SCaT team is requesting suggestions from interested clinicians on how to improve the resource and offers of assistance in reviewing and critiquing the protocols. Educational sessions related to effective use of the website are also being offered. A rural program covering 27 sites throughout NSW is expected to be completed by November this year. Metropolitan sites within NSW are being offered educational sessions from November onwards and a national education roadshow is being planned for January to April next year.

Inquiries or requests for onsite education or clinician participation can be directed to the CI-SCaT team on (02) 8374 5653 or by emailing ci-scat@cancerinstitute.org.au.

NEWS & ANNOUNCEMENTS

New CEO for The Cancer Council Australia

The Cancer Council Australia recently announced the appointment of a new Chief Executive Officer, Professor Ian Olver, to replace long-serving CEO Professor Alan Coates, who will retire from the role next year.

Professor Olver, Clinical Director of the Royal Adelaide Hospital Cancer Centre, will take up the position in May 2006.

The Cancer Council Australia President, Mrs Judith Roberts, said the role of CEO at the organisation was one of the nation's most important community sector positions, particularly as the number of cancer cases was projected to increase by more than 30 per cent over the next decade.

"The Cancer Council Australia represents the nation's eight state and territory Cancer Councils and is Australia's largest federated health charity, so the responsibility of guiding the organisation into a future that will see unprecedented new cancer challenges emerge is enormous," Mrs Roberts said.

"Professor Olver is an outstanding clinician, communicator and administrator. For many years he has shown an extraordinary personal commitment to the fight against cancer, through his work in clinical research, publications across a range of cancer-related areas and his involvement in delivering services at the frontline of cancer care, including in remote Indigenous communities."

As well as his role at Royal Adelaide Hospital, Professor Olver is Chair of the Medical Oncology Group of Australia, Board member of the National Breast Cancer Centre, Cancer Council Professor of Cancer Care at Adelaide University and Chair of The Cancer Council Australia's Medical and Scientific Committee. He is also a member of The Cancer Council's Oncology Education Committee and a former member of the multi-jurisdictional National Cancer Strategies Group set up to advise the Federal Government.

Professor Olver said he was enthusiastic about his new role with the nation's leading independent cancer control organisation. "The Cancer Council Australia plays a vital role in contributing to national cancer policy development and helping to coordinate the research, information, education and patient support activities of Cancer Councils Australia-wide," he said.

Mrs Roberts paid tribute Professor Coates, who will retire after nine years at the helm in May 2006.

"Professor Coates, through his tireless efforts and standing as one of the world's leading cancer authorities, led the way in establishing The Cancer Council Australia as the nation's peak non-government cancer control organisation.

"He has made a major contribution to the development of public policy in cancer care and control both in Australia and internationally."

New Cancer Forum Editorial Board member

The Cancer Forum Editorial Board would like to welcome its newest member, Kim Devery. Kim currently works at Flinders University teaching palliative care at postgraduate level. Along with other work she assists health professionals learn about paediatric palliative care, palliative clinical management and advanced concepts of palliative care.

Kim has also worked for many years as a nurse in acute and palliative care in Australia, the US, the UK and Kenya. She has completed undergraduate studies in Social Sciences (largely research methodology with major studies in the History and Philosophy of Science and Technology) at the University of New South Wales. After her honours year Kim worked on research regarding patient ideas of quality of life, health outcomes and continuity of care in palliative care.

Kim took up a postgraduate research position at Flinders University in Adelaide in 1998. She was appointed Lecturer in 2002. Kim's research interests include how to best talk with patients about prognosis and self-care for palliative care clinicians. She lives in Adelaide with her family.

Teenagers resist the urge to tan

Almost 90% of teenagers are now aware of the risk of skin cancer through sun exposure and more are resisting the urge to tan, according to new data released today.

The Cancer Council's National Sun Survey showed that 68% of 12 to 17 year olds did not attempt to get a tan in summer (2003/04), even though 60% indicated they would like one.

The findings were welcomed by the Chair of The Cancer Council's National Skin Cancer Committee, Craig Sinclair. "This is good news and indicates messages about skin cancer and sun protection are starting to connect with young Australians," Mr Sinclair said.

However, he cautioned the survey results weren't all good, particularly poor adoption of sun-protection behaviour. "The fact that 68% of teenagers did not go out and actively attempt to get a tan is a positive result and teenagers should be commended for that," Mr Sinclair said. "However, there are some concerning results from the survey; for example 25% of teenagers are still getting sunburnt on a typical summer weekend.

"We need to protect ourselves not just at the beach, but when we are enjoying a BBQ in the backyard, playing sport or are just out and about."

Mr Sinclair said it was encouraging with summer school holidays around the corner.

The Cancer Council was particularly concerned about the prevalence of melanoma in younger people. "It is alarming that 24% of all cancers in people aged 15-19 are melanomas, the most serious and potentially deadly form of skin cancer. This is the highest rate of all cancer in this age group."

Mr Sinclair said the survey provided interesting insights into teenagers beliefs about skin cancer and sun protection and subsequent actions to protect themselves. "Not only are teenagers more aware of the link between skin cancer risk and sun exposure, fewer teenagers (41%) than adults (50%) believe a tanned person looks more healthy.

"That is a great step forward, but the fact that a quarter of teenagers get sunburned on a typical weekend is a problem we need to overcome. We need to encourage them to take a multifaceted approach to sun protection. That means not just relying on sunscreen, but wearing sunglasses, a hat that protects the face, neck and ears, like the fashionable bucket hats, protective clothing and seeking out shade when they are outdoors."

Workplaces getting the SunSmart message

Aussie outdoor workers putting themselves at increased risk of skin cancer as they sweat it out in the harsh Australian sun is an image slowly but surely changing thanks to employer reforms, according to research from The Cancer Council's National Sun Survey.

The findings show that 50% of outdoor workers now have a sun protection policy at their workplace.

With 17% of Australians spending at least half their time at work outdoors and Australia having the highest rate of skin cancer in the world, The Cancer Council Australia stressed the importance of employers putting in place sun protection policies to protect their employees from sun exposure and the risk of skin cancer.

The Cancer Council's Chief Executive Officer, Professor Alan Coates, said he was encouraged by the positive approach by many employers around the country to protect their workers, but cautioned there was a long way to go, especially with small businesses and sub-contractors in the construction industry.

"The most significant changes we are seeing are in the telecommunications and utilities industries, as well as local councils, who are developing and implementing comprehensive sun protection policies," Professor Coates said.

"The challenge is small businesses, in particular sub-contractors, in the construction industry. Builders or carpenters with one or two employees still don't seem to understand the importance of sun protection for their workers."

The National Sun Survey found that 44% of outdoor workers' workplaces provided sunscreen, 42% provided hats and 24% made provision for portable shade for their employees.

Chair of The Cancer Council Australia's Skin Cancer Committee, Craig Sinclair, said employers had a legal requirement under Australian occupational health and safety legislation to provide and maintain a safe working environment for their employees. "Exposure to ultraviolet (UV) radiation is identified as a key area where employers are required to minimise risk for their employees," Mr Sinclair said.

There are several steps employers can take including:

- providing shade or moving tasks into shaded areas where possible;
- scheduling work that needs to be done in direct sunlight before 10am or after 3pm when UV radiation levels are lower;
- providing and maintaining equipment needed to protect outdoor workers from the sun; and
- providing information, instruction, training and supervision to reduce outdoor workers' risk.

"Employers should encourage their workers to wear sun protective clothing such as long pants and a long-sleeved shirt, a broad-brimmed hat, sunglasses and apply a broad spectrum 30 SPF sunscreen at least every two hours," Mr Sinclair said.

"They can also point out to their workers that the ATO has recognised the importance of sun protection for outdoor workers and they may be able to claim a tax deduction for the cost of sunscreen, sunglasses and hats."

Growth in cancer incidence to put pressure on health system

Australia would be unable to meet the needs of an unprecedented number of cancer patients unless planning for healthcare reform rapidly gathers pace, The Cancer Council Australia's Chief Executive Officer, Professor Alan Coates said.

Professor Coates was responding to an Australian Institute of Health and Welfare report that predicts cancer incidence will rise from 88,398 in 2001 to 115,400 in 2011, an increase of 31 per cent.

He said although the figures showed the underlying incidence rate of cancer after adjusting for age was relatively steady, both the absolute number of new cases and cancer prevalence (number of people alive after a diagnosis of cancer) in Australia would be markedly higher increasing demands on the health workforce.

"A 31 per cent increase in the number of newly diagnosed cancer patients will place significant pressure on the health system," Professor Coates said. "However, the hidden burden is the compound effect of prevalence, which describes the number of people living with cancer at any one time. Currently, there are around 270,000 people in Australia living with cancer, a figure which is likely to exceed 350,000 by 2011."

Professor Coates said a commensurate investment in the cancer workforce, as well as structural reforms to the system, were needed to help ensure that growing numbers of cancer patients had equitable access to treatment and care. He said it was incongruous that the nation's most deadly disease only accounted for around 5.8 per cent of healthcare expenditure.

"Australia can take some pride in having one of the world's best case survival rates, but this is little comfort to the any thousands of patients who report feeling lost in the health system and at the mercy of a cancer care 'lottery'," Professor Coates said.

"Standardised models of multidisciplinary care, accreditation and credentialing processes to underwrite best practice and improved access to psychological support are high on the list of things that need to be built into the system to treat

Cervical cancer vaccine available as early as next year

The Cancer Council Australia's vice president, Professor Ian Frazer, is celebrating the stunning results of pivotal clinical trials which show that a vaccine for preventing cervical cancer, which uses technology he helped develop, is 100% effective.

The vaccine protects women against two strains of the human papillomavirus that cause up to 70% of cervical cancer cases worldwide.

Each year around 300,000 women globally die from cervical cancer and the vaccine may have the biggest impact in developing countries that do not have pap-smear screening programs.

The vaccine is designed to be given in three doses over six months and should be given to women before they become sexually active.

CSL and Merck will seek approval for their vaccine (Gardasil) from the US Food and Drug Administration in the next two months, and Australia's Therapeutic Goods Administration early next year. GSK are also pursuing development of a cervical cancer vaccine using the same technology, which may be available within the next few years.

New position statements

Oral contraceptives

The use of combined oral contraceptives and cancer risk is a subject that has received considerable attention in recent times.

The Cancer Council Australia's position statement recognises that women found to be positive for human papillomavirus (HPV) who have been using a combined oral contraceptive for 10 years or more are at increased risk of developing cervical cancer. Women who are using combined oral contraceptives or have used them in the past 10 years are at slightly increased risk of developing breast cancer. The Cancer Council recommends all women aged 18-70 years who have ever been sexually active have a Pap test every two years and all women aged 50-69 have a mammogram every two years through BreastScreen Australia.

Combined oral contraceptives provide some protection against endometrial cancer and ovarian cancer, with this protection extending to women at risk of hereditary ovarian cancer.

Further research is required to assess the benefits and harms of long-term use, ie. greater than five years, of recently introduced hormonal contraception alternatives on cancer and other health risks.

Complementary and alternative therapies

Complementary and alternative therapies are a contentious subject due to the limited scientific evidence about their safety and efficacy.

The Cancer Council Australia supports a patient's right to seek information about all treatments and forms of symptom relief. However, as an evidence-based organisation we are not able to endorse treatments not clinically shown to be safe and effective.

We encourage healthcare professionals to respect their patients' interest in complementary and alternative therapies and to discuss with patients to help them make informed treatment decisions.

Believers support Daffodil Day

On 19 August The Cancer Council held its annual Daffodil Day. Thanks to strong community support, Daffodil Day is one of the most successful fundraising events in Australia. Daffodil Day is so popular as a fundraising event because it inspires belief that one day cancer will be defeated.

More than two million fresh daffodils and a range of event merchandise lined volunteer stalls at CBD locations, train stations and shopping centres across Australia, raising funds for cancer research and support services.

The funds raised on Daffodil Day contribute directly to Cancer Council initiatives in cancer research, prevention programs, advocacy, patient support and education services. These programs are carried out across all of the Cancer Council's eight state and territory member organisations.

Daffodil Day is strongly supported by a range of retail outlets that sell the event-related merchandise, including pins, magnets and pens. Another favourite is the Dougal bear, who every year receives a fashion makeover to become the best dressed bear in town.

The Cancer Council Australia would like to thank its national supporters: Coles, HIC network of Medicare offices, Amcal, ANZ, Cartridge World, Miller's Retail Group, Plants Plus, Quix and Rockmans.

For more information on the event please visit the Daffodil Day website – www.daffodilday.com.au or phone 1300 65

BOOK REVIEWS

100 QUESTIONS AND ANSWERS ABOUT YOUR CHILD'S CANCER

WL Carroll, J Reisman (Eds)
Jones and Bartlett Publishers (2005)
ISBN: 0–7637–3140–4 174 pages plus index.
RRP: $22.95

Written by a paediatric haematologist/oncologist and a senior paediatric haematology/oncology social worker this book guides readers through the journey parents may encounter when their child is diagnosed with cancer. The format encompasses six sections of questions and answers interspersed with personal reflections from parents and a few insights from health professionals. It incorporates a few illustrations, graphs and tables that would assist parents and families understanding. The audience could also include nursing students and nurses new to the area of paediatric haematology/oncology nursing, but offers nothing new to experienced clinicians.

The book is divided into six sections and concludes with an appendix of support organisations and a glossary. "The Basics" define some terminology and concepts surrounding a diagnosis of cancer. A special feature outlines the common paediatric cancers and includes symptoms, diagnosis, staging and treatment. It highlights that cancer is not contagious and that it is no-ones fault. "Diagnosis" addresses the myriad of tests and interventions that aid in diagnosing a paediatric malignancy. "Treatment Options" covers the types of treatments, prognosis, immunisations, chemotherapy, transplantation and clinical trials. End of treatment and long term consequences are touched upon. In "Side Effects and Complications of Treatment" new therapies are introduced. Pain, nutrition, the risk of infertility and transfusion reactions are briefly discussed, as are the late effects of radiotherapy. "Treatment Facilities and Healthcare Providers" offers some description of the different health care professionals that make up the team who care for a child/adolescent with cancer. Palliative care is introduced here. "Living and Coping with Cancer" provides some comment about the effects a diagnosis has on behaviour, discipline, schooling and reintegration and its impact. Maintaining normalcy and strategies to help family members cope are examined.

Some of the information within this text was specific to the American health system, therefore not useful in our local context. Some of the programs, support services, insurance issues and financial resources are not applicable to Australian families. In a text of this length no area is covered in any detail so further information needed would mean going to a more in depth resource. Some practical aspects of caring for a child/adolescent with cancer are referred to, such as radiological interventions and care of central venous access devices, which would be helpful for both the parent and family.

Overall it is a good basic resource for families with a child/adolescent being treated for a paediatric malignancy. It was good to see the theme throughout the text that it is a team approach to the health care in a paediatric haematology/oncology setting. The journey taken is very much a partnership between the family and the team. Unit specific education could be backed up with this book, it would not be a first line text. This is a cursory glimpse at aspects of caring for a child/adolescent with a paediatric malignancy.

Carina Boehm
Women's and Children's Hospital
Adelaide, SA

100 QUESTIONS AND ANSWERS ABOUT OESOPHAGEAL CANCER

P Ginex, J Hanson, B Frazzitta, M Bains
Jones and Bartlett Publishers (2005)
177 pages plus index.
RRP: $A22.95

This book has been written by three staff members and a former patient from the Thoracic Surgery Service at Memorial Sloan Kettering Cancer Centre in New York. A professor of surgery and two very experienced nurses combined with a man who was treated for oesophageal cancer six years to produce this book.

There is a logical sequence to this book and is very easy to read but at the same time comprehensive. As the title suggests there is a question and answer format which works well within this framework. The book is divided into 7 parts and also has a glossary of terms. It begins with a chapter titled The Basics, covering what is the oesophagus and what does it do as well as what is cancer of the oesophagus and what causes it. The book then moves through areas such as: risk and prevention, diagnosis and staging, coping with diagnosis, treatment options and living with oesophageal cancer. This chapter contains extensive practical nutritional advice. If treatment fails: advocacy and support is the last chapter and while it was good to see the authors pay attention to this area, it is all too brief when you consider the survival data for this cancer.

Contained throughout the book are contributions from the author who is a cancer survivor. He comments on a range of topics from reflux, dealing with the survival statistics for this malignancy to depression. His reflections are insightful and intelligent and add value to the book.

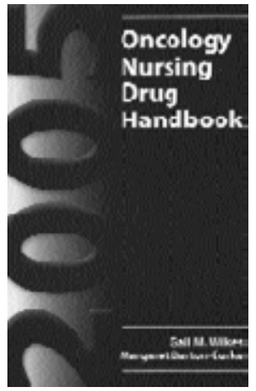
Australian cancer patients may find all the references to American based supports frustrating, except for those that are the web based.

Overall this excellent book will prove a good read to both cancer patients and their families with this condition as well as some health professionals looking for a good overview on the topic.

Meg Rogers
Peter McCallum Cancer Centre
Melbourne, VIC

2005 ONCOLOGY NURSING DRUG HANDBOOK

G M Wilkes & M B Burke
Jones & Bartlett Publishers (2004)
ISBN: 0-7637-3058-0 1101 pages plus index
RRRP: $US54.95



The 2005 edition of Oncology Nursing Drug Handbook by Gail M. Wilkes & Margaret Barton-Burke continues in the proven style of previous editions. The book is written for nurses by nurses, providing the experienced cancer nurse and those new to the specialty with a detailed resource concerning current cancer drug information. This edition is updated to include the latest anti-cancer treatments and an additional chapter detailing molecular targeted therapies.

For those not familiar with the layout, the book is divided into three sections – treatment, symptom management and complications.

Section 1: Treatment

This is the largest section comprising more than half the 1100 pages of the book. It is dedicated to current and investigational drugs. Also outlined are pre-treatment nursing assessment guidelines.

Chapter one, Introduction to Chemotherapy Drugs, includes a table detailing the mechanism of action of cytotoxic drugs in the cell cycle, a useful reminder for all nurses. Successive chapters cover Biological Response Modifier Therapy; Antineoplastic Treatment; Agonists: Radio sensitisers, Chemo sensitisers; Chemical Adjuncts; and Cytoprotective Agents. The final chapter, Molecularly Targeted Therapies, incorporates a detailed section on basic cell biology.

Section 2: Symptom Management

This details the management of pain; nausea and vomiting; anorexia and cachexia; and anxiety and depression.

Section 3 deals with five complications - constipation, hypercalcaemia, infection, constipation and diarrhoea. The chapters provide an introductory outline of incidence of occurrence, reasons for manifestation and treatment options.

Each section of the book contains detailed drug information, including indications for drug use, side effects, mechanisms of action and nursing implications. The nursing implications are provided in a nursing process format. The chemotherapy agent section includes practical self help advice for patients and their families.

Additional to the main text are 3 appendixes.

Appendix 1 Controlling Occupational Exposure to Hazardous Drugs

This is very comprehensive, including drugs other than cytotoxic chemotherapy. To be remembered is that the recommendations are American and there may be differences in Australian standard worksafe recommendations.

Appendix 2 National Cancer Institute Common Toxicity Criteria

This is provides a review of potential treatment related toxicities, listed alphabetically with descriptions and gradings.

Appendix 3 Cancer Chemotherapeutic Regimes (Adult)

Regimes are identified as indicated for specific cancers. This section is thorough, detailing single agent and combination regimes and provides current references. Not all regimes are in use in Australia.

The handbook is a high quality reference tool and is updated annually. Each chapter is well written, with information that is clear, concise and well referenced. It is a valuable resource for all nurses working in oncology. Also available in software for PC or palm pilot there is potential of placing this large handbook in your pocket on the ward.

Nicole Kinnane
Monash Medical Centre, VIC

A CANCER SOURCE BOOK FOR NURSES 8TH EDITION

American Cancer Society
C Varricchio (Ed)
Jones & Bartlett Publishers (2004)
ISBN: 0-7637-3276-1 557 pages plus index
RRP: $46.95

Keeping true to form, the eighth edition of the American Cancer Society's A Cancer Source Book for Nurses provides an excellent resource on a large number of cancers and cancer nursing related issues. This new edition, edited by Claudette Varricchio, comprises some 580 pages, an increase of nearly 100 pages on the previous edition published in 1997, but unlike many cancer nursing texts is still compact enough for nurses to carry to work or have in their home library if they so desire.

The chapters in this eighth edition have been updated and reviewed by authors, most of whom did not feature in the seventh edition. This has added to the scope of information contained within the chapters. In addition, the major sections of the book have been redefined to allow effortless navigating of the book for quick reference.

The are 37 chapters from over 50 authors covering many aspects of cancer nursing, together with an overview, albeit brief in many cases, of the major cancer sites and treatment approaches. The chapters are well written and are formatted in a logical sequence discussing the nature of the problem, management and the role of the nurse. Whilst there are chapters that outline cancer as a disease in our community, this is not a book that gives an in-depth description of cancer biology, epidemiology and screening. Rather, it covers these topics in a simple, easily readable style, giving the reader information without getting too bogged down in detail. Such is the case with the diagrams and tables in the book which are simple and easily interpreted. Both a comprehensive glossary and index add to the easy readability of this text.

Of particular note is a section in the book that is devoted to the experience and management of cancer symptoms. This section covers topics such as myelosuppression and cancer pain, to sleep problems and paediatric symptoms and responses.

As one would expect from the American Cancer Society, the book cites American statistics throughout and refers to many of the cancer initiatives and organisations within the US. This however does not make the book less attractive to the Australian nurse, as many of these aspects translate easily to the Australian experience.

I have no hesitation in recommending this book to both novice and experienced cancer nurses as a text that will compliment their knowledge base and act as a quick and easy reference for their practice.

Gordon Poulton
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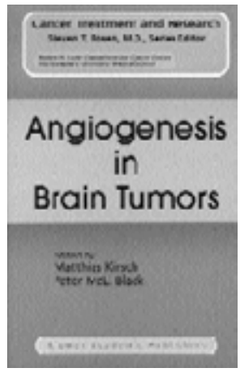
Angiogenesis in brain tumours

M Kirsch, P Black (Eds)
Springer-Verlag US (2004)
ISBN: 1-4020-7704-1 349 pages plus index
RRP: $US180.00



This book is written in 19 chapters covering general concepts of angiogenesis including normal embryonal blood vessel formation, experimental models, role of angiogenesis in brain tumours and approaches for anti-angiogenic treatments of brain tumours. The chapters vary widely in content, ranging from short experimental protocols to detailed descriptions of the structure and development of blood vessels and the molecular mechanisms of blood vessel growth regulation and anti-angiogenic clinical treatment protocols.

Due to the large number of authors there is some overlap and repetition of material covered, especially in the chapters dealing with angiogenic growth factors and receptors (chapters one and 13). However, the molecular regulators of angiogenesis and the environmental stimuli that favour angiogenesis in tumours are well covered.

Chapter two gives a very detailed description of the embryonal development of vessels in the CNS in quail. The quail model is of particular value for embryonal developmental studies as interspecies grafting experiments can provide a clue to the origins of particular organ structures.

Chapters three and four deal with mathematical modelling of tumour induced angiogenesis and measurements of blood vessel densities in tumours.

Rather short chapters seven, eight and nine deal with the isolation of blood vessels, MRI monitoring of glioma in the rat brain and in methods for vitro studying angiogenesis in vitro.

Chapter 15 deals with the vascular microenvironment in gliomas and provides a good compilation of the differences of vessel structure in glioma and normal brain leading to the breakdown of the blood-brain-barrier in the glioma microvasculature.

Chapter 16, showing a link of tumour vascularisation and invasion, is very compelling and well written.

Chapter 18 deals with clinical trials using a whole range of anti-angiogenic compounds and leaves the reader with perhaps unjustified optimism, given that in all clinical trials so far conducted on man the outcomes were rather disappointing, compared with the outcomes in the preclinical tests done with mice.

Overall, this book is a valuable resource for clinicians with an interest in the biology of brain tumours and provides ample references for those who are interested in getting more information on the subject from primary sources. The best chapters are probably the ones linking the biology of angiogenesis with brain tumour biology as they make the book unique.

Ulrike Novak
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Cancer as an environmental disease

P Nicolopoulou-Stamati, L Hens, CV Howard, N Van Larebeke (Eds)
Springer Netherlands (2004)
ISBN 1-4020-2019-8 199 pages plus index
RRP: $US98.00

Consider the dichotomy consequent upon the word, 'however' (not bolded in the original) in the following paragraph from the volume under review:

The predominant theory for the past 50 years has been that cancer is the result of cumulative mutations that alter specific locations in the cells DNA and which alter the proteins encoded by cancer-related genes. Susceptibility to mutation has been mainly researched with respect to peoples genetic makeup and their lifestyle, which are largely dictated by behavioural patterns. However a growing body of scientific evidence strongly implicates the environment in the causation of cancer. Findings from studies of wildlife, cancer trends, human migration, childhood cancers, twinning and industrial accidents suggest that concentrating solely on genetic origin and behavioural pattern as causes of DNA defects, and consequently the main causes of cancer needs to be re-evaluated.

Arguably, the dichotomy suggested does not, in fact, exist because, amongst other things, environmental causes of cancer specifically include the impact of lifestyle, and differences in cancer incidence in migrant groups are attributable to behavioural patterns. But the distinction described is crucial to the editors and some contributors to 'Cancer as an environmental disease'. For these individuals, there is the perception that implicating 'lifestyle' and 'behavioural' factors in the causation of cancer is akin to a 'blame the victim' and is incompatible with attributing cancer to industrial pollution and occupational exposures.

In the first three chapters of this book the notion that 'environment' can be separated from 'lifestyle' as accounting for cancer causation is pursued at the cost of scientific clarity. No attempt is made to present a clear distinction between the molecular genetic basis of inherited cancer and the molecular genetic explanation for malignant transformation. Increasing incidences of breast and prostate cancers (in Norway) is presented as being attributable to increasing pollution, without any reference to the possible impact of mammography and PSA testing on these trends.

Apart from those chapters concerned with a political agenda, some contributions are most informative. These include the discussion of gene-environment interaction, DNA damage induced by carcinogens and the health impact of accidents involving carcinogen exposure. However, the volume cannot be described as a reasonable assessment of environmental carcinogenesis because key issues such as the role of tobacco, alcohol and ultraviolet exposure are not addressed. People likely to benefit from this volume are individuals who seek to refine their current knowledge of particular issues rather than those hoping to gain an overall assessment of the topic 'environmental carcinogenesis'.

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Public Health Unit

Concise clinical oncology 1st edition

C Peedell
Elsevier (2005)
ISBN: 0-7506-8836-X 445 pages plus index
RRP: $79.95

In the days when doctors wore white coats, this book would have been referred to as a 'pocket book' and would have neatly fitted into the pocket of those coats. With its plastic cover, it would have easily withstood the wear and tear of every day use and its contents ensure that it would indeed be thumbed on a daily basis. The author's impetus for writing the book was motivated by his frustration as a junior doctor in being able to source useful information from the huge body of cancer literature that was relevant and easily applicable to patient care. He describes his target audience as medical students, junior doctors, general practitioners, nurses and allied health professionals. To these ends he fulfills a need.

The author is English and the introductory chapter refers to the Calman Hine Report, the NHS Cancer Plan and UK incidence and mortality statistics. However, given that the organisation of cancer services in most states of Australia is following a similar course to that of the UK, the chapter is generic enough to be applicable to the Australian setting and gives a brief background to the 'politics' of allocating resources and managing cancer services.

The book is arranged in three sections, plus appendices. Section 1 is titled 'Principles of Oncology' and includes basic cell biology, principle of screening, surgery, radiotherapy, systemic therapy, symptom management and clinical trials. Section 2 is literally the A – Z of cancers, with 36 different types of cancer included in alphabetical order, as well as a chapter titled 'Paediatric Oncology'. Section 3 covers general complications of cancer and oncological emergencies, with several short but important chapters that often don't rate as 'stand alone' chapters in similar texts (eg. metabolic problems and problems in advanced pelvic malignancy) but are commonly encountered in everyday practice. The appendices include tissue tolerances of radiotherapy, an A – Z of commonly used chemotherapy drugs, oncology related websites and ECOG and Karnofsky performance scales.

The disease specific chapters provide a concise overview of the epidemiology, presentation, diagnostic work up, management and prognosis of each cancer. The inclusion of the sections 'Future Perspectives' (describing clinical trial treatments with promising results to date), 'Problems in Advanced Disease' and 'Further Reading' (allowing readers to explore the topic in greater detail) in each chapter are a welcome addition.

The book is easily readable and pitched perfectly at the target audience. If white coats were still in vogue, I would commend this book as an essential item for every coat pocket. Given that they're long gone, I highly recommend that it grace the desks of all wards, clinics, departments and general practices that might find cancer patients in their midst.

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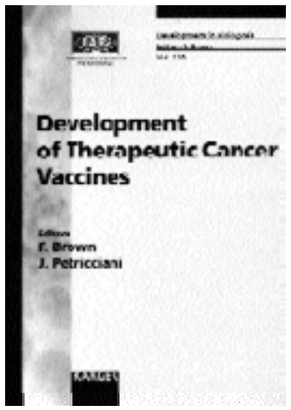
Development of therapeutic cancer vaccines

F Brown, J Petricciani (Eds)
Karger (2004)
ISBN: 3-8055-7736-2 236 pages plus index
RRP: $US235.00



Treatment of cancers with tumour vaccines remains a vigorous area of basic and clinical research. The material in this book is the proceedings of a conference on this topic held in Los Angeles in April 2004 sponsored by Cancer Vax Company, John Wayne Cancer Institute and the International Association for Biologicals. There is a section on regulatory issues such as how to establish standards of purity, potency and safety which are informative and which illustrate the problems in addressing these issues. The second section describes studies on autologous and allogeneic vaccines and heat shock proteins. The topics are dealt with quite briefly and the reader would need to access references to get more detail on the topics. Nevertheless, they have merit in providing a brief overview of the topics. Questions and answers of limited value are included.

Several chapters are included on dendritic cell vaccine approaches. Again they are presented in a very condensed

format and are value mainly as an overview of this area.

The final section is on preventive vaccines such as those against human papilloma virus and hepatitis viruses. Very brief chapters (extended abstracts) are included on novel topics such as the role of anatomic site in vaccination and monitoring and methods to monitor immune responses.

The material in the book will be mainly of interest to participants in the conference to remind them what was said. It could also be of interest to clinical researchers as a condensed look at some of the issues and may lead them to the literature in particular areas.

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Holland – Frei Manual of Cancer Medicine

CK Brown, BI Rini, PP Connell, MC Posner (Eds)
BC Decker (2005)
ISBN: 1-55009-169-7 663 pages plus index
RRP: $94.60

The preface of this books states that the book was created as a "concept of a basic introductory manual to cancer medicine" for "medical students, physicians in training and other health professionals". It has surpassed this with succinct coverage of the individual solid tumours and haematological malignancies.

The first four chapters offer a brief introduction to basic facets of cancer medicine, molecular biology, radiation oncology, cancer screening, diagnostic imaging and a brief chapter on the anticancer agents.

It has broken up each of the conditions and discusses them in four areas; an overview of the incidence and risk factors of the disease, with pathology and diagnosis. This is followed by the staging and prognostic factors. Treatment for each of the diseases is the third section, and the final section covers selected references that add weight as evidence based resources for current treatment and research and further readings. The book also covers four oncological emergencies, a chapter on AIDS-related malignancies and offers valuable easy to find reference material.

Of course this book is US focussed with all statistical material being of US origin but it does take over from what Casciato and Lowitz offered in the mid 1980s and 1990s. It also offers further access to up-to-date pointers to relevant literature without the literature search, with all readings the most recent for that field. The other bonus is that this book comes with a CD-ROM with the whole of the book on the CD.

This book is light on in substance in some areas like the oncological emergencies and anticancer agents, giving brief descriptions only. It also does not look at the issue of common side effects of treatment like nausea and vomiting or psychosocial issues of cancer treatment.

Overall the book is suited for the needs for the target audience, junior medical staff and other health professionals, is logically written and easy to follow for quick reference.

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Lymphedema Management: A Comprehensive Guide for Practitioners

JE Zuther
Thieme Medical Publishers (2005)
ISBN 1-58890-284-6
RRP $US59.95

This book consists of six chapters of information on lymphoedema management plus a section with sample forms and templates for the lymphoedema therapist. Published in 2005, it is an up to date guide to the management of primary and secondary lymphoedema.

The first half of the book consists of a very comprehensive guide to the anatomy and physiology of the lymphatic system and the etiology of lymphoedema. The remainder of the book concentrates on the use of complete decongestive therapy to treat lymphoedema.

The instructions are clear and precise with numerous illustrations and photographs. Scattered throughout the book are numerous references as well as a comprehensive list of recommended reading. This is an excellent reference book for any health professional with a specific interest in lymphoedema but due to the depth of the information provided is not a quick read.

Linda Liversidge
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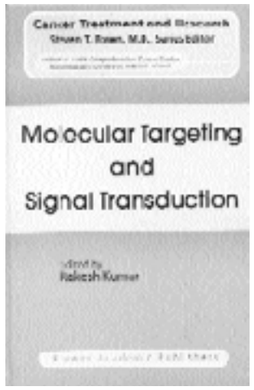
Molecular Targeting and Signal Transduction

R Kumar (Ed)
Springer-Verlag US (2004)
ISBN: 1-4020-7822-6 327 pages plus index
RRP: $US145.00



The pathogenic mechanisms giving rise to cancer frequently involve altered signal transduction pathways. The elucidation of signal transduction pathways in cancer cells, both at the proteomic and the genomic levels, has led to the design of drug molecules as cancer treatments that are intended to act at specific proteins of the signal transduction cascade. Many drug molecules directed against a wide range of signal transduction elements are being evaluated as potential anticancer therapies and several are currently in clinical trials; others are still in preclinical research and development. This book contains a collection of excellent reviews on various signalling molecules and their suitability as drug targets in cancer treatments. Written by internationally renowned scientists, all leaders in their fields, it examines the most important signalling pathways in cells and provides a clear understanding of the different components of each pathway and their complex interactions. It also describes current knowledge on the design, synthesis, and evaluation of the biochemical and biological activities of inhibiting molecules. Specific topics include a biomolecular survey of cell signals; the role of cell-to-cell communication, growth factor and hormone signalling in cancer; cell cycle deregulation and cell migration and adhesion.

The chapters of this book integrate elegantly with one another and provide the reader with both broad and comprehensive viewpoints. Remarkably current and up-to-date, the book promises to be a core text for university courses in cell signaling and molecular cell biology, and a valuable reference book for all scientists whose work involves or is interested in signal transduction, cancers or indeed any human disease where the pathogenic mechanism of disease involves signalling molecules.

Readership: Immunologists, cell biologists, molecular biologists, biochemists, pharmacologists, clinical researchers and students

Alison Greenway
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Oxford Handbook of Palliative Care

M Watson, C Lucas, A Hoy, I Back
Oxford University Press (2005)
ISBN: 0-19-850897-2 852 pages
RRP: GBP24.95

The Oxford Handbook of Palliative Care, published only in March this year (2005), is touted to be based on the Oxford Textbook of Palliative Medicine. Indeed, the Handbook is endorsed in a foreword provided by Dr Derek Doyle, one of the principle authors of the Textbook. The Handbook has been prepared by four UK-based palliative care medical specialists in conjunction with another 50 advisors and contributors listed.

The book contains surprisingly extensive palliative care information, including an outline of the advent of palliative medicine, associated terminology and opening chapters on ethical issues, communication (specifically breaking bad news) and research. Clinical information commences with discussion about the use of drugs in palliative care; "off-label" usage, patient medication charts, syringe drivers and a comprehensive formulary. A chapter on Oncology and Palliative Care is provided, with a useful overview of common cancers, chemotherapeutic agents and radiotherapy, side effects and their treatments and importantly the fit between oncology and palliative care. Of course, symptom management features significantly and is well covered.

Welcome inclusions are palliative care for non-malignant conditions, paediatric palliative care and palliative care for the elderly, all currently acknowledged as deserving specific attention from palliative care practitioners. Further topics included in this jam-packed handbook are spiritual care, bereavement, the roles of allied health professions in palliative care, complementary therapies, emergencies in palliative care, and under the heading miscellaneous, issues such as fitness to drive, tissue donation, travel and wills.

Indeed, this is a comprehensive book. Understandably, there is some bias to UK practice, notably with inclusion of diamorphine and reference to NHS systems and local laws. Extrapolation to local conditions would of course be necessary. One point to mention is whether this book is appropriately labeled a "Handbook". Some sections provide discussions that are quite textually based, rather than a quick reference dot point format. As well, in order to contain such a volume of information in a compact presentation, the printing is small and not easily read, although I acknowledge this reflects a personal deficit, albeit shared with others in my age cohort.

In summary, although the palliative care "bible", that is the latest edition of the Oxford Textbook of Palliative Medicine, is likely to remain one of the primary references used by palliative care professionals, the Oxford Handbook of Palliative Care provides an amazingly comprehensive overview at a significantly reduced size and cost. This makes the book extremely attractive for individual purchase. Further, the handbook would be a highly appropriate addition to areas such as GP surgeries, as well as the white coat pockets of junior medical officers, and is likely to significantly increase access to palliative care principles in non-specialist areas.

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Radiotherapy in Practice: Brachytherapy

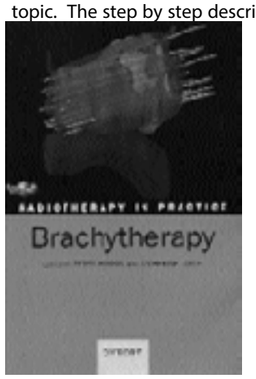
P Hoskin and C Coyle (Eds)
Oxford University Press (2005)
ISBN: 0-19-852940-6 193 pages plus index
RRP: GBP 29.95

Audience: The book is aimed at Radiation oncologists both training and qualified, medical physicists, radiation therapists and senior nurses.

Purpose: To provide practical guidance on the use of brachytherapy. Each chapter is designed to provide the reader with a solid background in physics and dosimetry as well as providing practical information on the use of brachytherapy in less common disease sites.

Content: This is the first in a series of three books on radiotherapy in practice; following volumes will cover external beam radiotherapy and radioisotope therapy.

The first two chapters concentrate on isotopes, delivery systems and principles of dosimetry. From a nursing perspective once past this the following chapters were very easy to read and understand. Each chapter is a concise unit which can stand alone. At the end of each chapter there is a list of further reading for anyone who would like more information on the topic. The step by step description of how to perform implants gives the reader a very clear picture of how the implant is to take place in theatre. The information is up to date with discussion of current clinical trials while chapter nine mentions the use of the mammosite balloon. The layout of the colour photographs was less than ideal with all photographs being together irrespective of treatment area and the topic of the chapter they were placed in. Overall the diagrams were



well used.

Limitations: The main limitation was the lack of nursing information. The amount of information and the layout changed in each chapter. As this is such a specialised area having some comprehensive nursing information would be an advantage.

Comment: This is a concise well written book which would be a great resource for any centre that has a brachytherapy service, or considering setting up a brachytherapy service in the future. This is a very good starting point for anyone with an interest in brachytherapy.

Deborah Stokes
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Alfred Hospital, VIC

Smoking cessation

R West, S Shiffman
Health Press (2004)
ISBN: 1-9037-3442-8
RRP: $35.20

Audience: Health professionals who have an interest in encouraging smoking cessation and/or treating nicotine dependence.

Purpose: To provide the rationale for, and knowledge of, practical and effective smoking cessation interventions for clinicians and other relevant health professionals.

Content: It is staggering fact that every branch of medicine is represented among the myriad diseases caused by smoking. As Smoking Cessation points out, smoking is a vital sign for the diagnosis of a range of medical conditions. The reason provided is that the cigarette is the most dangerous of nicotine delivery systems, delivering a cocktail of carcinogenic and toxic chemicals along with the nicotine. Furthermore, the cigarette is also the most effective of nicotine delivery systems, delivering the nicotine 'hit' to the brain within a few seconds. This is the crux of the matter; nicotine is powerfully addictive. The booklet shows how medically accepted criteria for drug dependence is clearly applicable to the experience of most smokers.

In addition to explaining the pharmacology of nicotine the booklet touches on the social, psychological and economic influences on smoking at both the individual and population levels. The brief discussion of best practice tobacco control measures such as taxation, advertising bans and public smoking bans may be of value for those interested in public policy approaches to reducing population smoking rates.

The 'How to' of the booklet can be found in Chapter 7. It provides as comprehensive a guide to behavioural and pharmacological treatments as could be included in a booklet of this size. The special needs of particular groups of smokers (eg pregnant smokers) are also addressed.

Highlights: The 'Fast Facts' format of this publication allows quick access to the key messages of the booklet. These appear in bullet-point form within coloured boxes at the end of each chapter. The references for each chapter are similarly treated.

The subject matter of this booklet lends itself to technicality. However the authors have skillfully conveyed the content in a most readable way.

Limitations: This booklet comprises few limitations. One that these reviewers noted was that research cited is mainly US and UK sourced. Also, the information about access to medication is based on UK and US availability. For example, in the US some nicotine replacement therapy products are available only on prescription. In Australia however, NRT products are available without a prescription; although they are subject to particular scheduling requirements.

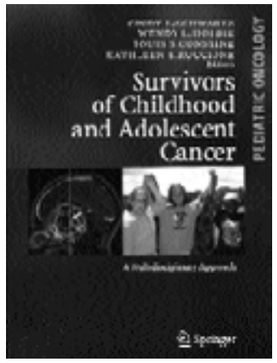
Comment: This booklet is a concise yet comprehensive information source for the busy practitioner. The authors are well-credentialed tobacco control professionals who have written a highly readable guide to smoking cessation approaches.

Greg Soulos and Kim Pearce
The Cancer Council NSW
Sydney, NSW

Survivors of childhood and adolescent: a multidisciplinary approach 2nd edition

CL Shwartz, WL Hobbie, LS Constine,
KS Ruccione (EDS)
Published by Springer-Verlag (2005)
ISBN: 3-540-40840-1 3434 pages plus index
RRP: EU129.95

Childhood and adolescent survivors are a large and growing population. Along with survival there are potentially a range of therapy related long term sequelae. As the survivors move into adulthood they need to be advocates for their own health care needs. The survivor must know what the potential late effects from their therapy and the consequences of the late effect may be. The initial education should be the responsibility of the treating institution, as is the monitoring of late effects until they become young adults. As young adults transition from the paediatric institution to either a primary care provider or adult institution late effect monitoring should be ongoing and referral to appropriate specialty physician as required.



This book provides comprehensive algorithms of late effects by disease along with clear tables to facilitate evaluation and assessment of late effects. The tables indicate causative treatments ie. surgery, chemotherapy, radiotherapy. Signs and symptoms of presenting late effect and indicates the required screening and diagnostic tests required, followed by the recommended management and intervention for each late effect. Chapters are in disease system's which are easy to read with all but two chapters following the same format of pathophysiology, clinical presentation, risk factors, detection and screening. Chapter eight is dedicated to hearing and is very detailed. Chapter 19, Psychological Aspects and Chapter 20, Transition Issues, highlight areas of need other than disease focused for survivors.

I would recommend this book as an excellent introduction to establishing a multidisciplinary approach to care for survivors. The Children's Oncology Group Long-Term Follow-Up Guidelines for Survivors of Childhood, Adolescent and Young Adult Cancers are available free of charge online at www.survivorshipguidelines.org.

Gaye Dadd
Princess Margaret Hospital for Children
Perth, WA

Urologic oncology

J Richie, A D'Amico
Elsevier Saunders 2005. First Edition
RRP: $275.00

This is an attractively presented book covering all of the urological cancers which might be met by a practicing urologist. It includes such cancers as adrenal tumours, which although operated on by an urologist might also be classified as an endocrine tumour. Paediatric tumours such as Wilm's tumours and neuroblastomas are also covered.

The first part of the book begins with a series of primer chapters covering the 'basic science' of urological malignancy. It begins with the molecular and cell biology underpinning urological malignancies. Following these there are chapters covering the basics of radiotherapy, chemotherapy and immunotherapy as they pertain to urological cancer. Each of these chapters covers the basic mechanisms of action of the different modalities and side effects expected. The first part ends with chapters relating to quality of life and imaging.

The second part of the book contains a chapter or two dedicated to each organ and the malignancy associated with it. The content is largely surgical and although other modalities are well represented the information is much briefer. Quite detailed information is provided for many of the urological procedures including blow by blow descriptions of how each operation is performed.

The text is logically set out and relatively easy to read. The information is set at a level at which most physicians (or surgeons) should be able to follow without detailed knowledge of urological malignancy. As such it provides an excellent overview of the topic. Extensive use of the diagrams and graphic photos, particularly in the surgical chapters contributes to the overall understandability of the text. Each chapter is well referenced and indexed.

As a medical oncologist I found the chemotherapy sections brief. Overall concepts and approaches were solidly explained, however descriptions of exact chemotherapy regimens was lacking. I suspect the same is true of the radiation techniques and descriptions. The information was also a little out of date, however no more than I would expect of any text given the rapidity at which this field is moving.

Overall it is more of a surgical text with much greater detail gone into with this modality than with chemotherapy or radiotherapy (or immunotherapy). As a book it is likely to be of greatest use to urologists and surgical oncology trainees, although it is also a handy reference for medical or radiation oncologists with involvement in urological malignancy. Its strength is more as an overview text for oncologists rather than a definitive reference.

Richard North
Newcastle Mater Misericordiae Hospital, NSW

CALENDAR OF MEETINGS

CALENDAR Of MEETINGS – AUSTRALIA AND NEW ZEALAND

Date	Name of Meeting	Place	Secretariat
2005			
November			
15-18	32nd Clinical Oncological Society of Australia Annual Scientific Meeting	Brisbane QLD	Pharma Events Ph: +61 2 9280 0577 Fax: +61 2 9280 0533 Email: conferences@pharmaevents.com.au
2006			
March			
23-27	XVIII Symposium Neuroradiologicum of the World Federal of Neuroradiological Societies (WFNRS)	Adelaide SA	World Federation of Neuroradiological Societies (WFNRS) South Australia Ph: +61 8 820 44405 Fax: +61 8 837 41731 Email: michael.sage@fmc.sa.gov.au Web: www.snr2006.sa.gov.au
May			
14-17	Australasian College of Dermatologists 39th Annual Scientific Meeting	Melbourne VIC	Australasian College of Dermatologists PO Box 2065, Boronia Park NSW 2111 Ph: +61 2 9879 6177 Fax: +61 2 9816 1174 Email: admin@dermcoll.asn.au Web: www.dercoll.asn.au
July			
12-14	Royal College of Nursing Australia National Conference	Cairns QLD	Royal College of Nursing Australia PO Box 219, Deakin West ACT 2600 Ph: +61 2 6283 3400 Fax: +61 2 6282 3565 Email: nicole@rcna.org.au Web: www.rcna.org.au
14-15	Cancer Nurses Society Of Australia 9th Winter Congress	Adelaide SA	Pharma Events Ph: +61 2 9280 0577 Fax: +6 1 2 9280 0533 Email: conferences@pharmaevents.com.au Web: www.cnsa.org.au
August			
9-12	Medical Oncology Group Australia Annual Scientific Meeting	Sanctuary Cove QLD	Pharma Events Ph: +61 2 9280 0577 Fax: +61 2 9280 0533 Email: moga@pharmaevents.com.au
September			
3-9	ACCORD Workshop – A Workshop in Effective Clinical Trials Design	Sunshine Coast QLD	The Australia and Asia Pacific Clinical Oncology Research Development (ACCORD) Workshop Level 6, 52 Phillip Street, Sydney NSW 2000 Ph: +61 2 8247 6207 Fax: +61 2 9247 3022 Email: mog@racp.edu.au
October			
26-29	RANZCR 57th Annual Scientific Meeting	Christchurch NZ	Royal Australian and New Zealand College of Radiologists (RANZCR) Ph: +61 2 9268 9777 Fax: +61 2 9268 9799 Web: www.ranzcr.edu.au
November			
29 Nov – 1 Dec	33rd Clinical Oncological Society of Australia Annual Scientific Meeting	Melbourne VIC	Pharma Events Ph: +61 2 9280 0577 Fax: +61 2 9280 0533 Email: cosa@pharmaevents.com.au

CALENDAR Of MEETINGS – International

Date	Name of Meeting	Place	Secretariat
2005			
November			
5-9	53rd Annual Scientific Meeting of the American Society of Cytopathology	San Diego USA	American Society of Cytopathology 400 West 9th Street Suite 201 Wilmongton DE 19801-1555 USA Tel: +1 302 429 8807 Email: asc@cytopathology.org Web: www.cytopathology.org/meetings/index.php
7-9	CNIO Cancer Conference: Cancer and Aging	Madrid Spain	CNIO – Spanish National Cancer Centre C/ Melchor Fernandez Almargo 3 Madrid 28029 Spain Tel: +34 91 2246900 Fax: +34 91 2246980 Email: ccc@cnio.es Web: www.cnio.es/ccc
11-13	Oncology Nurses Society Institutes of Learning	Phoenix USA	Oncology Nursing Society 125 Enterprise Drive Pittsburgh Pennsylvannia 15275-1214 USA Tel: +1 866 257 4667 Fax: +1 877 369 5497 Email: meetings@ons.org Web: www.ons.org
27 – Dec 2	91st Meeting of the Radiological Society of North America (RSNA)	Chicago USA	Radiological Society of North America (RSNA) 829 Jorie Blvd, Oak Brook IL 60523-2251 USA Tel: +1 630 571 7879 Fax: +1 603 571 7837 Email: sdrew@rsna.org
December			
2-6	47th Annual Meeting of the American Society of Hematology	San Diego California USA	American Society of Haematology 1900 M street NW Suite 200 Washington DC 20036 USA Tel: +1 20 2776 0544 Email: meetings@hematology.org Web: www.hematology.org
6-10	28th Annual San Antonio Breast Cancer Symposium	San Antonio USA	San Antonio Breast Cancer Symposium c/o San Antonio Cancer Institute 7979 Wurzbach Rd Suite U-531 San Antonio Texas 78229 USA Tel: +1 210 616 5912 Fax: +1 210 949 5009 Email: RMarkow@ctrc.net Web: www.sabcs.org
8-10	12th Hong Kong International Cancer and Congress & 2nd Annual Meeting of Research Centre of Cancer	Pokfulam Hong Kong	Congress Secretariat, Department of Surgery University of Hong Kong Medical Centre, Queen Mary Hospital Tel: +852 2818 0232 Fax: +852 2818 1186 Email: hkicc@khu.hk Web: www.hkicc.org
10-14	American Society for Cell Biology (ASCD): 45th Annual Meeting	San Francisco USA	American Society for Cell Biology (ASCB) 8120 Woodmont Avenue Suite 750 Bethesda MD 20814-2755 USA Tel: +1 301 347 9300 Fax: +1 301 347 9310 Email: ascbinfo@ascb.org
2006			
February			
2-4	Breast Cancer: From Gene to Gene	Amsterdam Netherlands	European Cancer Centre Amsterdam, Netherlands Ph: +31 20 346 2547 Fax: +31 20 346 2525 Email: gtc06@ikca.nl Web: www.eurcancen.org/GenetoCure06/index.htm

Date	Name of Meeting	Place	Secretariat
2-4	American Psychosocial Oncology Society (APOS) 3rd Annual Conference	Amelia Island (Florida) USA	American Psychosocial Oncology Society Charlottesville, USA Ph: +1 434 293 5350 Fax: +1 434 977 0899 Email: aholcomb@apos-society.org Web: www.apos-society.org
12-14	European Multidisciplinary Colorectal Cancer Congress 2006	Berlin Germany	Congress Care Hertogenbosch, Netherlands Ph: +31 73 690 1415 Fax: +31 73 690 1417 Email: info@congresscare.com Web: www.colorectal2006.org
March			
2-4	7th Continental Meeting of the International Society of Pediatric Oncology (SIOP) in Africa	Marrakech Morocco	SIOP Secretariat Eindhoven, Netherlands Ph: +31 40 269 7544 Fax: +31 40 269 7545 Email: secretariat@siop.nl Web: www.siop.nl/frameset_achter.asp?p=4
12-15	3rd International Conference on Translational Research and Pre-Clinical Strategies in Radiation Oncology (ICTR2006)	Lugano Switzerland	ICTR2006 Bellinzona, Switzerland Ph: +41 79 310 4330 Fax: +41 91 811 8678 Email: jacques.bernier@hcuge.ch Web: www.iosi.ch/ictr2006.html
21-25	5th European Breast Cancer Conference (EBCC)	Nice France	The Federation of European Cancer Societies (FECS) Brussels, Belgium Ph: +32 2 755 0205 Fax: +32 2 755 0200 Email: EBCC5@fecs.be Web: www.fecs.be/conferences/ebcc5
April			
8-11	4th International Society of Pediatric Oncology (SIOP) Asia Conferencce	Shanghai China	Shanghai Children's Medical Center Dept of Pediatric Hematology-Oncology Shanghai, China Ph: +86 021 5873 2020 Fax: +86 021 5839 3915 Email: siop_asia_2006@yahoo.com Web: www.siop.nl/frameset_achter.asp?p=4
20-22	5th European Oncology Nursing Society (EONS) Spring Convention	Innsbruck Austria	FECS – 5th EONS Spring Convention Brussels, Belgium Ph: +32 2 775 0206 Fax: +32 2 775 0200 EONS5@fecs.be Web: www.fec.be/conferences/eons5
May			
6-12	14th Scientific Meeting and Exhibition for Magnetic Resonance in Medicine	Seattle USA	International Society for Magnetic Resonance in Medicine Berkeley, USA Ph: +1 510 841 1899 Fax: +1 510 841 2340 Email: info@ismrm.org Web: www.ismrm.org/
June			
14-17	World Congress on Gastrointestinal Cancer	Barcelona Spain	Imedex Inc Alpharetta, USA Ph: +1 770 751 7332 Fax: +1 770 751 7334 Email: meetings@imedex.com Web: www.worldgicancer.com
21-24	11th Annual Meeting of the European Haematology Association (EHA-11)	Amsterdam Netherlands	Eurocongress Conference Management Amsterdam, Netherlands Ph: +31 20 679 3411 Fax: +31 20 673 7306 Email: eha@eurcongress.com Web: www.ehaweb.org
July			
1-4	19th Meeting of the European Association for Cancer Research	Budapest Hungary	EACR 19 Conference Secretariat – Federation of European Cancer Societies Brussels, Belgium Ph: +32 2 755 0205 Fax: +32 2 775 0200 Email: EARC19@fecs.be Web: www.fecs.be/emc.asp?pageId=729&Type=P

Date	Name of Meeting	Place	Secretariat
8-12	UICC World Cancer Congress	Washington DC USA	American Cancer Society (ACS) Atlanta, USA Ph: +1 404 417 5998 Fax: +1 404 728 0133 Email: secretariat2006@cancer.org Web: www.worldcancercongress.org
12-15	13th World Conference on Tobacco OR Health	Washington, DC USA	American Cancer Society (ACS) Atlanta, USA Ph: +1 404 417 5998 Fax: +1 404 728 0133 Email: secretariat2006@cancer.org Web: www.13thwctoh.org
August			
17-20	16th World Congress of the World Society of Cardio-Thoracic Surgeons (WSCTS 2006)	Ottawa Canada	WSCTS 2006 Ottawa, Canada Ph: +1 613 761 5116 Fax: +1 613 761 4478 Email: info@wscts2006.com Web: www.wscts2006.com
September			
17-21	39th Annual Meeting of the International Society of Pediatric Oncology (SIOP)	Geneva Switzerland	SIOP Secretariat Eindhoven, Netherlands Ph: +31 40 269 7544 Fax: +31 40 269 7545 Email: secretariat@siop.nl Web: www.siop.nl/frameset_achter.asp?p=4
27-Oct 1	14th International Conference on Cancer Nursing	Toronto Canada	International Society of Nurses in Cancer Care (ISNCC) Cheshire, UK Ph: +44 116 270 3309 Fax: +44 116 270 3673 Email: conference@isncc.org Web: www.isncc.org
29-Oct 3	31st European Society for Medical Oncology (EMSO) Congress	Istanbul Turkey	ESMO Congress Viaganello-Lugano, Switzerland Ph: +41 91 973 1919 Fax: +41 91 973 1918 Email: congress@esmo.org Web: www.esmo.org
October			
18-21	8th World Congress of Psycho-Oncology	Venice Italy	International Psycho-Oncology Society Charlottesville, USA Ph: +1 434 293 5350 Fax: +1 434 977 1856 Email: info@ipos-society.org Web: www.ipos2006.it
November			
5-10	XVIII FIGO World Congress of Gynecology and Obstetrics	Kuala Lumpur Malaysia	AOS Conventions and Events Sdn Bhd Kuala Lumpur, Malaysia Ph: +60 3 4252 9100 Fax: +60 3 4257 1133 Email: consec@figo2006kl.com Web: www.figo2006kl.com
7-10	18th EORTC-NCI-AARC Symposium on Molecular Targets and Cancer Therapeutics	Prague Czech Republic	Federation of European Cancer Societies (FECS) Brussels, Belgium Ph: +32 2 775 0201 Fax: +32 2 775 0200 Email: ENA2006@fecs.be Web: www.fecs.be
29-Dec 2	13th Congress of the European Society of Surgical Oncology (ESSO 2006)	Venice Italy	ESSO 2006 Conference secretariat – Federation of European Cancer Societies (FECS) Brussels, Belgium Ph: +32 2 775 0205 Fax: +32 2 775 0200 Email: ESSO2006@fecs.be Web: www.fecs.be/emc.asp?pageId=719&Type=P

THE CANCER COUNCIL AUSTRALIA

The Cancer Council Australia is the peak national cancer control organisation. Its members are the leading state and territory cancer councils, working together to undertake and fund cancer research, prevent and control cancer and provide information and support for people affected by cancer.

MEMBERS
The Cancer Council ACT
The Cancer Council New South Wales
The Cancer Council Northern Territory
The Cancer Council South Australia
The Cancer Council Tasmania
The Cancer Council Victoria
The Cancer Council Western Australia
Queensland Cancer Fund

AFFILIATED ORGANISATIONS
Australasian Association of Cancer Registries
Clinical Oncological Society of Australia Inc
Palliative Care Australia

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Dr Kevin White PhD

CLINICAL ONCOLOGICAL SOCIETY OF AUSTRALIA INC

The Clinical Oncological Society of Australia (COSA) is a multidisciplinary society for health professionals working in cancer research or the treatment, rehabilitation or palliation of cancer patients.

It conducts an annual scientific meeting, seminars and educational activities related to current cancer issues. COSA is affiliated with The Cancer Council Australia.

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MEMBERSHIP

Further information about COSA and membership applications are available from:
www.cosa.org.au or cosa@cancer.org.au

Membership fees for 2006

Ordinary Members: $160
Associate Members: $100
(includes GST)

INTEREST GROUPS

ANZ Children's Haematology and Oncology
Breast Oncology
Cancer Nurses Society of Australia
Cancer Research
Clinical Research Professionals
Epidemiological
Gastrointestinal Oncology
Gynaecological Oncology
Lung Oncology
Medical Oncology
Melanoma and Skin
Neuro-oncology
Palliative Care
Pharmacy
Psycho-Oncology
Radiation Oncology
Regional and Rural Oncology
Social Workers
Surgical Oncology