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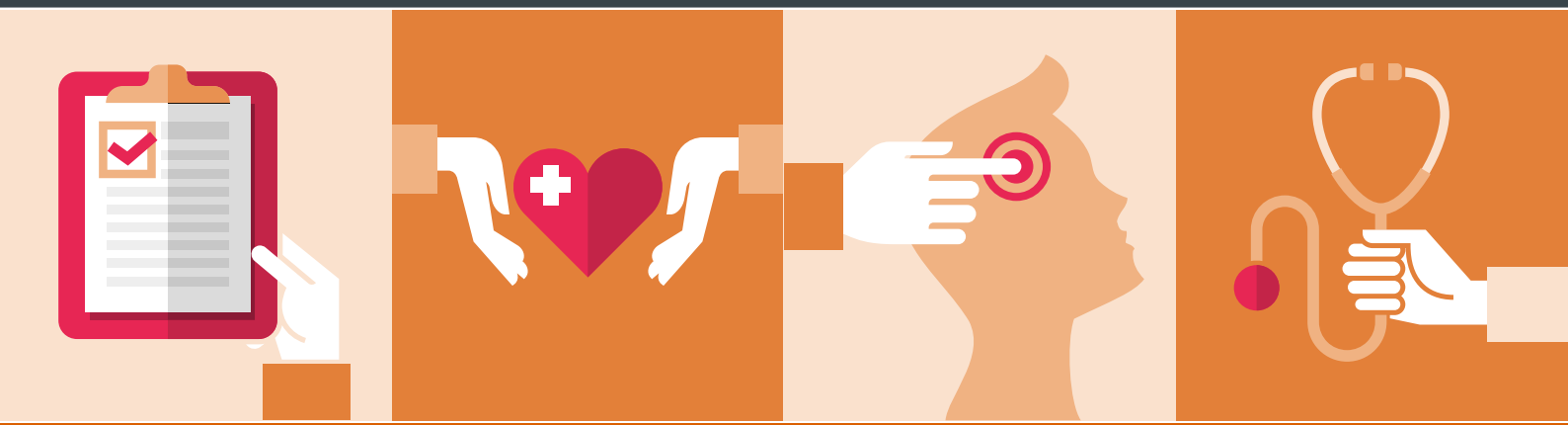
Independent learning program for GPs



Unit 520 September 2015

Cancer

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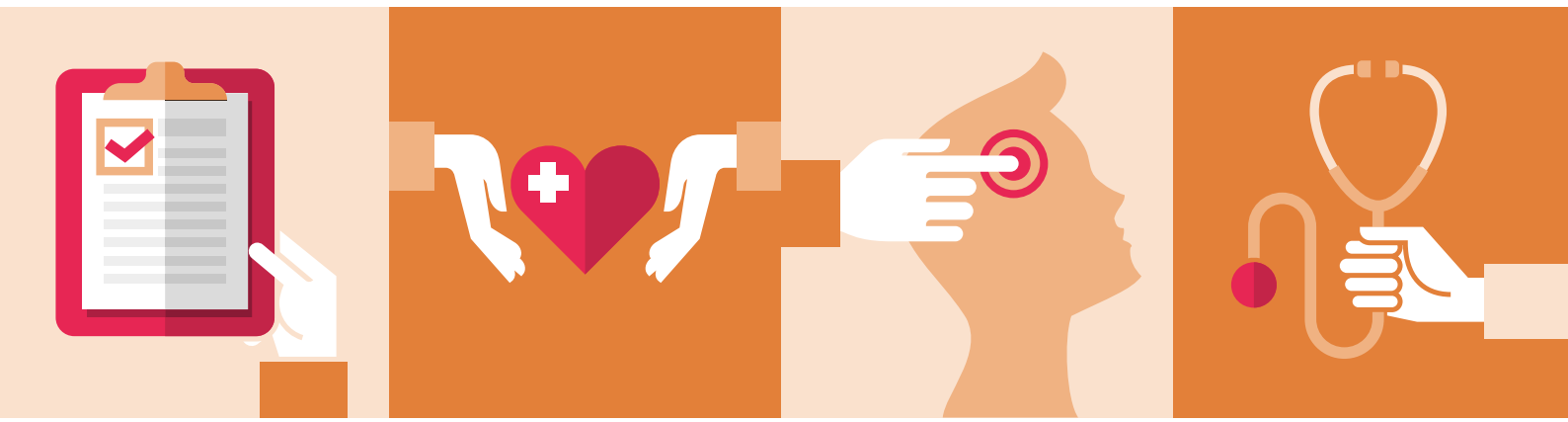

Cancer

Unit 520 September 2015

The five domains of general practice

- Communication skills and the patient–doctor relationship
- Applied professional knowledge and skills
- Population health and the context of general practice
- Professional and ethical role
- Organisational and legal dimensions

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ABOUT THIS ACTIVITY

Cancer is a major cause of illness in Australia and one of the leading causes of death among those aged 45–64 years.[1,2] The most common cancers in Australia are skin, prostate and breast cancer.[1] In 2008, an estimated 434,000 Australians were treated for non-melanoma skin cancers. Malignant neoplasms account for 4.7 of every 100 general practice encounters.[3] The incidence of melanoma has more than doubled in males and increased by 47% in females since 1982.[1] In 2010, breast cancer was the most common cancer in Australian women (excluding non-melanoma skin cancer), accounting for 28% of all new cancers in women.[3–5] Prostate cancer accounts for about 30% of all new cases of cancer diagnosed in men (excluding non-melanoma skin cancers).

This edition of *check* considers the diagnosis and management of cancer in general practice.

LEARNING OUTCOMES

At the end of this activity, participants will be able to:

- summarise the approach to management of patients with melanoma
- outline the assessment, management and follow-up of patients with breast cancer
- list the pros and cons of prostate-specific antigen tests
- discuss the management and follow-up of prostate cancer
- describe treatment options for cancer-related bone pain.

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ACRONYMS

ADT	androgen deprivation therapy
BMI	body mass index
BPH	benign prostatic hyperplasia
CT	computed tomography
DRE	digital rectal examination
IMRT	intensity-modulated radiation therapy
LDH	lactate dehydrogenase
mpMRI	multi-parametric magnetic resonance imaging
MRI	magnetic resonance imaging
NHMRC	National Health and Medical Research Council
NICE	National Institute for Health and Care Excellence
PET	positron emission tomography
PSA	prostate-specific antigen
SLNB	sentinel lymph node biopsy
TRUS	trans-rectal ultrasound
UV	ultraviolet

CASE 1

CAMERON COMES FOR A SKIN TEST

Cameron, 50 years of age, comes to see you about a pigmented skin lesion on his left leg. He is worried because his friend Jake has just been diagnosed with a melanoma.

QUESTION 1

What history would you take to determine Cameron's risk of developing melanoma?

QUESTION 2

What history would you take about Cameron's skin lesion?

QUESTION 3

How will you examine Cameron?

FURTHER INFORMATION

Cameron has no symptoms and nothing abnormal to find on examination, except for a suspicious, multi-coloured, pigmented skin lesion with an irregular edge. You do not have a special interest in skin lesions and you refer Cameron to a skin specialist for dermoscopy and management. Resection showed a melanoma of 1.2 mm thickness.

QUESTION 4

What further tests should be done to determine if the melanoma has spread widely?

FURTHER INFORMATION

Cameron's sentinel lymph node biopsy (SLNB) was negative and he returns to your care for follow up. He has no further symptoms or suspicious skin lesions.

QUESTION 5

How often would you review Cameron? What tests will you do at follow-up examinations?

FURTHER INFORMATION

Two years later, Cameron presents with a 3-month history of weight loss, lethargy and intermittent pain in the right upper abdomen. On examination, he has a palpable, tender region in his liver, 3 cm below the right costal margin. You suspect that Cameron has developed metastatic disease.

QUESTION 6

What tests would you order?

FURTHER INFORMATION

You refer Cameron to an oncologist who confirms the diagnosis on biopsy and commences him on pembrolizumab. Two months later, Cameron presents to you with increasing fatigue, cough, dyspnoea and myalgia.

QUESTION 7

What is your differential diagnosis?

FURTHER INFORMATION

Cameron begins to respond to treatment. He is concerned that his son and daughter may be at risk and asks you if they will need regular checks. They are asymptomatic and, apart from the family history, have no specific risk factors.

QUESTION 8

What follow-up would you advise for Cameron's son and daughter?

CASE 1 ANSWERS

ANSWER 1

Of patients' characteristics, older-aged (average age early 60s) people are more likely to develop melanoma, as are men compared with women.[1] People with paler skin pigmentation and freckling, and those with red or blond hair and blue eyes are more at risk than people with darker skin, darker hair and brown eyes.[2] People with a large number of pigmented naevi on their skin are more likely to develop melanoma.[3] It is worth asking Cameron if he tends to burn easily after sun exposure rather than tanning, as this conveys a greater risk of melanoma.[4] Asking about the frequency of sunburn may not be particularly helpful in countries such as Australia, where melanoma is a common occurrence. Melanoma is more associated with episodic intense sunburns than more continuous sun exposure. It is important to ask Cameron whether he has had a past history of melanoma, which may increase his risk 10-fold, or even a non-melanoma skin cancer, which may increase the risk fourfold.[3] Asking about family history is also important as having a first-degree relative (parent, child or sibling) doubles the risk of a person developing melanoma.[1]

ANSWER 2

The most important feature of the history to ask about is whether there has been any change in the skin lesion. For melanoma, changes most often occur over months.[5] The early changes are those in size, shape and colour. As the melanoma invades, it may become raised, which can be associated with bleeding or crusting. Although most of these changes are not associated with symptoms, the most common sensation is itching. A mnemonic for the appearance of melanomas is the ABCD[E] rule:[6]

- Asymmetry
- Border irregularity
- Colour variation
- large Diameter
- [Evolution]

ANSWER 3

The most important aspect of clinical examination is to examine the whole skin surface under good lighting. In particular, if melanoma is suspected, the patient should be examined for enlarged lymph nodes in the appropriate draining area (eg axilla or groins).[1] The accuracy of a melanoma diagnosis has been found to be increased by those in general practice with a sub-specialty and training in the use of dermoscopy.[7] Others are encouraged to refer.

ANSWER 4

Cameron has a stage 1 melanoma. Melanoma staging is as follows:[8]

- Stage 0: <0.1 mm
- Stage 1: <2 mm without ulceration or up to 1 mm with ulceration
- Stage 2: >2 mm
- Stage 3: spread to lymph nodes
- Stage 4: distant spread.

There is no evidence that a chest X-ray or computed tomography (CT) scanning of the head, chest, abdomen or pelvis, to detect occult metastases in stage 1 or 2 melanoma, improves the outcome.[9,10] The likelihood of the melanoma having spread is directly related to prognostic factors, particularly depth of invasion. The combined positron emission tomography (PET)/CT scan does not add to management decisions or improve outcomes in this situation.[11] Blood tests for lactate dehydrogenase (LDH) have not been found useful in detecting occult metastases.[9] Moreover, there are no studies showing that earlier detection of metastatic disease improves survival over later detection.

In the detection of regional lymph node involvement, ultrasonography has been found to be superior to palpation.[12] However, SLNB is superior to both ultrasonography and PET scan. The final results of a study published in 2014 show a survival advantage for patients with intermediate-thickness melanoma (1.2–3.5 mm) who underwent SLNB, compared with those who underwent nodal observation.[13]

Given that Cameron has an intermediate-thickness melanoma, he should have an SLNB at this time, but no other staging investigations. The patient should be informed that an SLNB will help make a decision about who would benefit from clearance of the lymph nodes. Patients who have this decision made on SLNB have a better disease-free and melanoma-specific survival compared with those who do not have an SLNB.[13]

ANSWER 5

There is only low-level evidence about follow-up intervals. Cameron has stage 1 disease and it is recommended that patients in this group are followed up every 6 months for 5 years and annually thereafter with a history and examination. Tests are done only to investigate symptoms.[1] Patients with stage 2 or 3 melanoma should be followed up every 3–4 months. In Australia, however, it has been shown that up to 75% of patients detect their own recurrences.[1] There is no evidence that earlier detection by routine scans or examinations improves the outcome.

Patients should be instructed, therefore, to gain an awareness of the lesions on their skin and report any persisting symptoms promptly. It would also be a good opportunity to remind patients about the need for sun protection when the ultraviolet (UV) index is 3 or above to prevent further skin damage and subsequent skin cancers.

ANSWER 6

The purpose of the tests, initially, is to investigate Cameron's symptoms. There is the suspicion of metastatic melanoma in the liver because of Cameron's persistent constitutional symptoms and pain over the liver. A liver ultrasound would be the simplest test to confirm the suspicion of liver metastases. What would follow are CT scans of the chest, abdomen and pelvis; these would be appropriate to investigate the right upper quadrant pain. CT scans

have been shown to be superior to chest X-rays for detecting pulmonary metastases.[14] PET/CT scans have high sensitivity and specificity for detecting melanoma metastases that are >1 cm in diameter. Adding a PET scan to the other scans becomes particularly important for detection of any additional disease if there is consideration of resecting the metastases, as the PET scan may rule out other previously undetected metastases.[15] For detecting brain metastases, CT scans are not as good as contrast-enhanced magnetic resonance imaging (MRI).[16] PET and MRI scans are not available for GPs to order on the Medicare Benefits Schedule, so would be ordered by specialists in order to plan treatment. For example, whole-body fluorodeoxyglucose PET scans, following initial therapy, can be performed for the evaluation of suspected metastatic or recurrent malignant melanoma in patients considered suitable for active therapy. In Cameron's case, cerebral disease is a possible cause of his lethargy. Often, a brain scan is important only when there is known metastatic disease elsewhere. Blood tests for lactate dehydrogenase (LDH), complete the staging investigations as this can be used to follow the course of the disease if LDH is elevated initially. Other blood test ordered that may be relevant to future treatment planning are electrolytes, liver function tests and full blood examination.

ANSWER 7

Progressive melanoma is the most serious of the differential diagnoses to exclude. This can be achieved by re-scanning with CT and comparing with the previous scans. The concern would be that new pulmonary metastases have arisen.

Another possibility is infection. The development of a chronic pneumonia would explain the new symptoms. X-rays, CT scans and cultures would form part of the investigation of this possible diagnosis.

The most likely diagnosis is that Cameron is experiencing some of the side effects of pembrolizumab.[17] Toxicities associated with the emerging targeted and immunological therapies are quite different from those of conventional chemotherapy. Side effects may include:

- general: fatigue, fever and peripheral oedema
- respiratory: cough and shortness of breath
- musculoskeletal: arthralgia, myalgia and back pain
- infections: upper respiratory infections and sepsis
- gastrointestinal: nausea and vomiting, diarrhoea or constipation, anorexia and abdominal pain
- skin: rash, itch and vitiligo
- haematological: anaemia
- nervous system: headache, dizziness and insomnia

Blood tests may reveal anaemia, elevation of liver transaminases, and low albumin and low sodium or high sugars and triglycerides can be detected.

It is very important to know the range of treatment side effects that the patient experiences as this will inform the differential diagnosis of a symptom that occurs during treatment.

ANSWER 8

Cameron's son and daughter have twice the risk of developing melanoma because of their father's melanoma.[2] In some cases, mutations encoded by CDKN2D are inherited.[18] A subset of familial melanomas will have this CDKN2D germline mutation. Identifying such high-risk families may allow for surveillance and prevention. However, unless there are specific reasons for managing these mutation carriers differently, they are usually only tested for in individuals from selected known high-risk families with multiple members who have developed melanoma. That is, if an index case with a strong family history of melanoma is found to have the mutation, then other family members are tested but this is not used as a screening test for a person's likelihood of developing melanoma.[19]

Given that Cameron's children have no risk factors, apart from family history, they are not in a high-risk category, which would warrant routine surveillance. However, they should be counselled about the importance of knowing the condition of their own skin and reporting any changes as soon as they occur. This advice should also be given to those under surveillance.[20]

Cameron's children should also be given advice about skin cancer prevention, which includes avoiding sun exposure, particularly when UV light is intense enough to damage the skin.[21] This occurs when the UV index is 3 or above. Use of hats, appropriate clothing and sunglasses, and the application of sunscreen will help prevent skin damage that can later become skin cancer. It is best to seek shade when the UV radiation is intense. The use of sun beds should be avoided, as the intensity of the radiation from these can be greater than that from the midday sun.

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CASE 2

PHILLIP WANTS TO DISCUSS PROSTATE CANCER SCREENING

Phillip is aged 58 years and is a patient at your general practice. He attends infrequently. Eighteen months ago, you performed an annual check-up. On that occasion, Phillip's blood pressure (120/80 mmHg sitting), fasting lipid profile and glucose levels were normal. He has no family history of ischaemic heart disease, hypertension or diabetes. He has made an appointment to see you today to discuss prostate-specific antigen (PSA) testing, which he read about in the local newspaper.

QUESTION 1

How would you manage this consultation?

QUESTION 2

What general history questions should you consider?

QUESTION 3

What specific history questions should you consider relating to prostate cancer and PSA testing?

FURTHER INFORMATION

Phillip has no lower urinary tract symptoms and no family history of prostate cancer or any other cancers. You update Phillip's electronic record with this information and note that he has not been tested for PSA.

QUESTION 4

What examination(s) would you perform for Phillip?

FURTHER INFORMATION

After a careful discussion in which Phillip is informed about the benefits and harms of PSA screening, he decides to have the PSA test. You document clearly the discussion that was held regarding the pros and cons of testing.

Phillip also consents to a digital rectal examination (DRE). The DRE is negative and there are no abnormal findings of a hard nodule in the posterior part of the prostate. Phillip sees you 1 week later for a review of his test results. His PSA level is 6.5 ng/ml (reference range: 0–4.0 ng/mL).

QUESTION 5

How would you interpret the results? What are the differential diagnoses for Phillip?

QUESTION 6

What are your management options for Phillip now?

FURTHER INFORMATION

You refer Phillip to the local urologist. The urologist advises Phillip to have a transrectal ultrasound (TRUS) core biopsy of the prostate and obtains informed consent from Phillip after explaining the risk of infection and bleeding.

QUESTION 7

What is the purpose of a TRUS core biopsy? How are the results interpreted?

FURTHER INFORMATION

The results of Phillip's TRUS core biopsy are shown below.
PSA, 6.5 ng/ml, 20 TRUS core biopsies

Macroscopic:

- Specimen 1: labelled right apex. Core biopsies 7, 10, 17 mm
- Specimen 2: labelled left apex. Core biopsies 14, 16, 17 mm
- Specimen 3: labelled right mid. Core biopsies 6, 10, 12, 15 mm
- Specimen 4: labelled left mid. Core biopsies 4, 12, 13, 15 mm
- Specimen 5: labelled right base. Core biopsies 13, 14, 16 mm
- Specimen 6: labelled left base. Core biopsies 8, 14, 17 mm

Microscopic:

- Right apex: the core biopsies are benign
- Left apex: there is adenocarcinoma (Gleason score 3 + 3 = 6, involving one core)
- Right mid: the core biopsies are benign
- Left mid: there is adenocarcinoma (Gleason score 3 + 3 = 6, involving one core)
- Right base: the core biopsies are benign
- Left base: the core biopsies are benign

QUESTION 8

What is the diagnosis? What are the implications for Phillip?

QUESTION 9

What management options are available for Phillip? What is the GP's role in Phillip's management?

QUESTION 10

Are there any secondary prevention actions that should take place?

CASE 2 ANSWERS

ANSWER 1

The consultation requested is specifically for a discussion about PSA screening. This requires a patient-centred discussion about the pros and cons of PSA screening.[1] The National Health and Medical Research Council (NHMRC) recommends that patients considering PSA screening should be informed about the test. This involves a careful discussion about the accuracy of the PSA test, information about management actions when abnormal PSA reading occurs, and related benefits and harms of further investigation and treatment, including overdiagnosis and overtreatment.[2] Although there is a potential individual benefit from PSA testing, in view of the low absolute mortality benefit found in screening trials, population-based prostate cancer screening is currently not recommended in Australia.[3–6]

The issues of test accuracy, overdiagnosis and overtreatment are the key reasons for the absence of a national screening program. The initial consultation needs to be tailored to the patient so that these issues can be explained in a concise and patient-centred manner.

In addition to general history and examination, you should consider decision tools to facilitate understanding of PSA screening.[1]

ANSWER 2

You may ask Phillip if he has had any lower urinary tract symptoms (eg frequency, haematuria and obstructive symptoms). However, the likelihood of positive symptoms caused by prostate cancer is low and it is more likely that benign prostatic hyperplasia is the cause of lower urinary tract symptoms.[2]

ANSWER 3

On specific history, you should ask if there is any family history of prostate or other types of cancer. Men with one or more first-degree relative diagnosed with prostate cancer under the age of 65 years have a higher risk of the disease.[7,8] A family history of breast cancer associated with inherited mutations of the *BRCA1* and *BRCA2* genes also increases the risk of prostate cancer.[7,8]

ANSWER 4

A DRE should be considered for Phillip. The Cancer Council of Australia and Prostate Cancer Foundation of Australia are currently reviewing the role of DRE in prostate cancer screening in general practice. Official release of these guidelines will occur at the end of 2015, which do not recommend the use of DRE in prostate cancer screening in general practice. The DRE can detect a small percentage of prostate cancers when a PSA reading is normal. However, a normal DRE does not mean that the patient does not have prostate cancer. This information should be discussed with Phillip.[2]

ANSWER 5

The elevated PSA indicates possible prostate pathology.

The differential diagnoses are:

- prostate cancer
- asymptomatic inflammatory prostatitis
- benign prostatic hyperplasia (BPH).

All three differential diagnoses need to be considered; however, seven out of 10 cases with a raised PSA result are not due to cancer.[2] Further evaluation with appropriate urological input may be required.

ANSWER 6

The options for Phillip include referral to a urologist for specialist opinion to exclude prostate cancer. You could also repeat the PSA test if asymptomatic inflammatory prostatitis is suspected. This can be done 6–8 weeks after the initial test. Antibiotics are not required for this condition.[2,9] If a repeat PSA test shows continued elevation, a urological assessment is required.

BPH could cause an elevation of PSA levels, but this is unlikely given the absence of lower urinary tract symptoms.[10]

ANSWER 7

The TRUS core biopsy assists in confirming the diagnosis of prostate cancer. Patients should be advised that there is a risk of infection and/or bleeding.[11] Usually, during a TRUS core biopsy, at least 12 cores are taken for pathology assessment. Each core is assessed with a calculation of the Gleason score. The Gleason score is a histopathological grading system score out of 10. A primary and secondary pattern grade is given out of 5, with the combined total giving the final score. A score of 6 indicates low-risk prostate cancer, score of 7 indicates intermediate risk and scores above 8 indicate high-risk prostate cancer.[12]

ANSWER 8

The results of the biopsy show prostatic adenocarcinoma in the left apex and mid lobes. Phillip's results show a Gleason score of 6 with two of 20 cores, which indicates low-risk prostate cancer. Until recently, patients with low-risk prostate adenocarcinoma were offered radiation oncological and surgical options. Active surveillance is now an additional option for patients with low-risk prostate adenocarcinomas. Active surveillance is different from watchful waiting, as the aim for the patient is still of curative intent.[2,13]

ANSWER 9

There are number of options available for Phillip.[2] These include:

- Active surveillance – this entails 6-monthly DRE and PSA. Regular prostate biopsies are performed every 1–3 years to re-assess the Gleason score and reclassify the patient's condition. If the PSA reading and Gleason score indicate a change to a higher risk cancer, then the patient will need to have surgery or radiation oncological treatments.
- Multi-parametric magnetic resonance imaging (mpMRI) of the prostate – the role of mpMRI in prostate cancer screening is yet to be defined and more research is required. However, prostate mpMRI has the potential to decrease the number of unnecessary prostate biopsies, decrease the diagnosis of low risk prostate cancer and increase the detection of potentially life-threatening prostate cancer.[14–16]
- Active treatment:
  - surgery – total open/laparoscopic/robotic total prostatectomy
  - radiation oncology – GPs should provide information to patients about radiation therapy as a treatment option. A radiotherapy opinion can be arranged by the treating urologist or from primary care.

The urologist should provide a careful explanation of the treatment options. The GP also plays a vital role in clarifying the patient's concerns and providing advocacy to ensure the patient is fully aware of the risk and benefits of the various management options and different patterns of side effects.

ANSWER 10

There are no specific secondary prevention activities that prevent prostate cancer. However, regular exercise, a balanced diet and ensuring a normal body mass index (BMI) are recommended.[17]

CONCLUSION

Prostate cancer is the most common cancer diagnosed in men in Australia and is more common in older men; 85% of cases are diagnosed in men over the age of 65 years. In 2010, 19,821 new cases of prostate cancer were diagnosed in Australia. In 2011, there were 3294 deaths caused by prostate cancer, accounting for 13% of all cancer deaths in Australian men.[18]

The management of prostate cancer has evolved over the past few years, with advances in treatment (eg robotic total prostatectomy). Low-risk cancer (Gleason score 6) prostate cancers are now managed using the active surveillance pathway; delayed curative treatment is performed for significant prostate cancer progression during the surveillance period. The emerging field of mpMRI prostate scanning needs to be monitored and further research is required before a final conclusion can be made about the role of this technology in the management of prostate cancer.

RESOURCES

- Cancer Council Victoria. Optimal care pathways, www.cancervic.org.au/for-health-professionals/optimal-care-pathways
- Cancer NSW Cancer directory, www.cancerdirectory.com.au
- Prostate Cancer Foundation of Australia – Resource. www.prostate.org.au/publications-resources/resources/understanding-prostate-cancer-treatments-and-side-effects

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CASE 3

KAREN HAS A LUMP IN HER BREAST

Karen, a beautician aged 54 years, has made an appointment to see you because she found a lump in her right breast. The lump has been present for 1 month but recently, Karen has noticed that it has been increasing in size. Karen has a history of anxiety and is worried about the lump.

QUESTION 1

What is your initial approach to this consultation?

QUESTION 2

How would you examine Karen? What aspects would you focus on?

FURTHER INFORMATION

Your examination reveals a 28 mm, hard, irregular mass, palpable at 9 o'clock on Karen's right breast. It is 3 cm away from the areola. The mass is not fixed to the chest wall or Karen's skin, and is not tender to palpation. There are no overlying skin changes. Karen has no palpable right axillary lymphadenopathy. Respiratory and abdominal examinations are unremarkable.

QUESTION 3

What is your initial diagnostic impression?

QUESTION 4

What tests are required to confirm the diagnosis?

FURTHER INFORMATION

You arrange for Karen to have mammogram, which shows a 28 mm spiculated mass with a cluster of microcalcifications in the upper outer quadrant of the right breast. An ultrasound of Karen's right axilla does not reveal any lymphadenopathy. A biopsy arranged at the time of the mammogram is consistent with a grade 3 invasive ductal carcinoma. The tests confirm that Karen has an invasive breast cancer without evidence of nodal involvement.

QUESTION 5

How would you explain the results to Karen? How would you explain the next steps in managing the diagnosis?

QUESTION 6

What is the role of the GP in the management of breast cancer?

CASE 3 ANSWERS

ANSWER 1

Evaluating a patient with a palpable breast mass begins with history and examination. The history should include a review of past medical history, medications, allergies and assessment of risk factors for breast cancer.

Established risk factors for breast cancer include:

- increasing age[1]
- post-menopausal obesity[2] (body mass index [BMI] ≥30 kg/m^2)
- previous breast pathology including benign breast disease
- highly dense breast tissue[3]
- reproductive factors (early menarche,[4] late menopause and nulliparity[5])
- family history
- smoking.[6]

The history of the presenting complaint should include:

- any change in the appearance of the breast
- new skin changes
- nipple changes (inversion/retraction/ulceration/erythema)
- nipple discharge
- pain associated with the mass
- evolution of the mass
- precise location of the mass
- changes in the mass
- changes during the menstrual cycle.

ANSWER 2

Before examining Karen, it is important to obtain consent. Always consider the need to provide culturally appropriate care, recognising the different cultural meanings associated with a diagnosis of cancer.[7]

Breast examination should include the neck, chest wall, both breasts and axillae, and physical examination.[8] The patient should be inspected in the upright and supine positions, with adequate exposure of the chest. The examination should begin with the patient seated and her arms relaxed. She should then be asked to raise her arms over her head so the lower portions of her breasts can be examined. The patient should put her hands on her hips and press inwards so as to contract the pectoral muscles, to reveal any other areas of retraction.

Inspection of the breasts should include:

- asymmetry
- skin changes
- nipple changes.

After inspection, proceed to palpation of regional lymph nodes and the breasts in a systematic and thorough fashion in concentric circles.[9]

The location of a mass and any abnormalities found on examination should be clearly documented. Important features to note include size, location, consistency and mobility. A clock system can be used for documentation, using the location on a clock to indicate the location of the mass palpated. It is also important to document the distance from the areola as part of localisation. When details are well documented, the location can be easily identified on subsequent visits.

ANSWER 3

Karen's history and examination suggest that she may have localised breast cancer. Excluding breast cancer in Karen is a priority. Palpable breast masses are very common in women and can be divided into benign and malignant masses. Most palpable masses are benign.[10,11]

Benign masses include:

- fibroadenoma: benign mass found typically in younger women
- simple cyst: benign fluid-filled cyst that may be present in pre- and post-menopausal women
- fibrocystic changes: common in pre-menopausal women and do not usually form discrete masses; most patients present with pain that may be constant or cyclical
- fat necrosis: benign breast mass that develops after trauma to a breast
- galactocele: milk retention cyst in women who are breast feeding.

Malignant masses include:

- invasive histologies: the most common invasive breast cancer is invasive ductal carcinomas (70–80% of breast cancers). Other invasive breast cancers include infiltrating lobular carcinoma and mixed ductal/lobular carcinoma
- pre-invasive histologies: may present with a mass, although these are most commonly detected radiologically in situ in the carcinoma (ductal or lobular).

If you are uncertain about the interpretation of symptoms and signs, consider discussing this with a specialist.[7]

ANSWER 4

The National Institute for Health and Care Excellence (NICE) guidelines state that if patients present with symptoms and signs of breast cancer, investigations need not necessarily delay the referral to a specialist.[12]

Investigation includes the triple assessment, which includes physical examination, breast imaging and non-excision biopsy.[13] A diagnostic mammogram is the first appropriate imaging test for a patient with a palpable breast mass. It is important to note that lobular breast cancers may be mammographically occult (ie not visible on a mammogram) and detection may require ultrasonography. Mammography may be less accurate in detecting breast cancer in younger women, given they generally have denser breast tissue.[14] In addition, there is limited evidence that screening reduces breast cancer mortality in women aged 40–49 years.[15,16] In Australia, women under the age of 40 years are not eligible for screening mammography.[14]

Ultrasonography of the breast is a useful diagnostic test to evaluate a palpable mass and can be ordered with a mammogram. Ultrasonography is useful in assessing whether a mass is solid or cystic in nature. It can also be useful in evaluating axillary nodes.[17]

Non-excision biopsy can be either a fine needle aspiration biopsy or core biopsy.

ANSWER 5

It is important to be honest about the diagnosis with Karen and explain that the tests have confirmed breast cancer. Explain to Karen that you will refer her urgently to a breast surgeon to address treatment of the cancer as soon as possible. She should be reassured that, on basis of the ultrasound findings, the cancer appears to be localised.

Explain that the surgeon may undertake further testing, including core biopsy of the breast lesion. A core biopsy is a larger biopsy than a fine needle aspiration and therefore can yield more information. Karen will then most likely be managed with curative-intent surgery for the removal of the cancer. At least one lymph node may be removed to confirm that lymph nodes are not involved. Further treatment will be determined by histology and nodal status at operation.

It is also important to assess Karen's need for continuing psychological and emotional support while she waits for her appointment.[7,13] It is vital that you include all appropriate information in your referral, including the urgency of the referral.[7,13]

ANSWER 6

GPs are key providers of care for patients with breast cancer. As illustrated in this case, the GP is often the first point of contact for women with breast symptoms. In Victoria, two-thirds of surgical referrals for suspected breast cancer arise from GPs.[18] Although a large percentage of women will have benign conditions,[10,11] prompt definitive diagnosis of breast conditions is vital.

GPs have an important role in the ongoing monitoring of patients after surgery and during adjuvant therapy (chemotherapy and radiotherapy). Patients may present to their local practice with postoperative wound infections or complications following chemotherapy. GPs also provide ongoing psychological support for women following their treatment for breast cancer. GPs not only provide useful information to patients but can also reinforce the information given by specialists. GPs also have a vital role in care coordination.

Specialists are keen to develop and maintain close ties with GPs and encourage ongoing active involvement in their patients' breast cancer journey.

RESOURCES FOR PATIENTS

- Cancer Australia provides information for patients, http://canceraustralia.gov.au/affected-cancer/cancer-types/breast-cancer

RESOURCES FOR DOCTORS

- The National Institute for Health and Care Excellence provides:
  - Referral guidelines for cases of suspected cancer, www.nice.org.uk/guidance/ng12
  - Diagnosis and treatment guidelines, www.nice.org.uk/guidance/cg80/chapter/1-recommendations#referral-diagnosis-and-preoperative-assessment
- Cancer Australia provides the following documents:
  - Clinical guidance for responding to suffering in adults with cancer, http://guidelines.canceraustralia.gov.au/guidelines/suffering/ch01.php
  - Breast cancer, http://canceraustralia.gov.au/clinical-best-practice/breast-cancer [Accessed 2 June 2015].
  - The investigation of a new breast symptom: a guide for general practitioners, http://canceraustralia.gov.au/sites/default/files/publications/ibs-investigation-of-new-breast-symptoms_50ac43dbc9a16.pdf
  - Breast cancer risk factors – a review of the evidence, http://canceraustralia.gov.au/publications-and-resources/cancer-australia-publications/breast-cancer-risk-factors-review-evidence
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CASE 4

PAUL IS WORRIED ABOUT GETTING PROSTATE CANCER

Paul is 68 years of age. Recently, his brother, aged 55, was diagnosed with localised prostate cancer. Paul is worried about his risk of cancer and seeks your opinion on prostate cancer screening. Paul has not had any urinary symptoms and reports normal erectile function. He has enjoyed good health for most of his life and perindopril, for hypertension, is the only medication he takes). He has no known allergies, is a non-smoker and rarely drinks alcohol. He lives with his wife, and they exercise regularly and maintain good social contacts.

QUESTION 1

What is the burden of prostate cancer in Australia and how do men typically present?

FURTHER INFORMATION

Given that Paul's brother, a first-degree relative, has been diagnosed with prostate cancer, you order a serum prostate-specific antigen (PSA) test.

You also perform a digital rectal examination (DRE) and palpate a prostate nodule occupying less than half of the left lobe, consistent with stage T2a disease. Paul's PSA level is found to be elevated at 15 ng/mL (age-related reference range 0–4.5 ng/mL).[1] You refer Paul to a urologist and, subsequently, he undergoes a transrectal ultrasound-guided (TRUS) biopsy of the prostate. Histopathology shows a Gleason score of 4 + 3 = 7 disease in 8 of 12 cores, with up to 70% core involvement. There is no evidence of perineural infiltration, extraprostatic extension or seminal vesicle involvement. A staging bone scan and computed tomography (CT) of the abdomen and pelvis did not reveal any evidence of nodal, visceral or skeletal metastases.

QUESTION 2

How is clinically localised prostate cancer stratified for the purpose of decision making?

FURTHER INFORMATION

Paul recovers from his TRUS biopsy. Staging imaging with CT of the abdomen and pelvis plus whole body bone scan show no evidence of abdominopelvic adenopathy, visceral and osteoblastic skeletal metastases.

Paul is therefore diagnosed with unfavourable–intermediate clinically localised prostate cancer. He returns to his urologist to discuss treatment options.

QUESTION 3

What are the treatment options for Paul?

QUESTION 4

What is the appropriate strategy for Paul?

FURTHER INFORMATION

Paul's case is discussed at a genitourinary multidisciplinary team meeting and an active treatment strategy is recommended. Paul discusses his treatment options with his urologist and radiation oncologist to understand the advantages and disadvantages of the different modalities. He elects to undergo radical (curative-intent), dose-escalated, image-guided, intensity modulated radiation therapy (IMRT). His radiation oncologist recommends a 6-month course of neo-adjuvant androgen deprivation therapy before commencing radiation therapy.

QUESTION 5

What are the advantages and disadvantages of surgery, compared with radiotherapy, for clinically localised prostate cancer?

QUESTION 6

What is the current standard of care for men receiving radiation therapy for localised prostate cancer? What is the patient experience?

QUESTION 7

What is the role of neo-adjuvant androgen therapy in the management of localised prostate cancer?

QUESTION 8

How are men followed up after radiation therapy for localised prostate cancer?

CASE 4 ANSWERS

ANSWER 1

Prostate cancer affects one in five men and accounts for more than 3000 deaths in Australia each year.[2–4] Most men present with disease that is confined to the prostate (localised prostate cancer) and have no clinical evidence of nodal or distant metastases. The majority of men present with no associated symptoms. However, in some patients, lower urinary tract symptoms, such as urgency, frequency, nocturia, and dysuria, may indicate the presence of underlying pathology. Less commonly, symptoms such as haematuria, haematochezia, constipation, intermittent diarrhoea and renal impairment from bladder outlet obstruction signify locally advanced disease.

Clinical factors associated with localised prostate cancer include:[5]

- older age
- obesity
- high dietary intake of fats
- race
- previous prostate intraepithelial neoplasia
- family history.

The National Health and Medical Research Council (NHMRC) advises that the risk of developing prostate cancer and the risk of dying from prostate cancer increase considerably from age 50–70 years. Men with a family history of prostate cancer are also at higher risk of developing prostate cancer. All patients must be informed of the relative benefits and harms of PSA testing, including a discussion on test accuracy, information about management options if the PSA is found to be abnormal, and the benefits and harms of further investigation and treatment(s).[6]

ANSWER 2

On the basis of the PSA level, DRE findings (clinical stage) and Gleason score at diagnosis, localised prostate cancer can be stratified into low-, intermediate- and high-risk groups (*Table 1*).[7] Risk group stratification reflects the baseline risk of distant metastatic disease.[8]

Table 1. Localised prostate cancer risk groups[8]

	Low risk	Intermediate risk	High risk
PSA	0–10 ng/mL	10–20 ng/mL	>20 ng/mL
Clinical T-stage	T1–T2a	T2b	T2c–T4
Gleason score	≤6	7	≥8

The DRE is important to assess the clinical stage into the following subgroups:

- T1c – tumour identified by needle biopsy
- T2a – tumour involves one-half of one lobe or less
- T2b – tumour involves more than one-half of one lobe but not both lobes
- T2c – tumour involves both lobes
- T4 – tumour is fixed or invades adjacent structures other than seminal vesicles, such as external sphincter, rectum, bladder, levator muscles, and/or pelvic wall.

The Gleason score is a histological grading system score out of 10 that combines a primary score (denoting the predominant pattern) with a secondary score (lesser common pattern), each out of 5, to give a total score out of 10. A tertiary pattern may also be reported. The score reflects the degree of aggressiveness based on resemblance to normal prostate glandular tissue and is graded between 2 and 10; higher values indicate higher grade disease.[9]

ANSWER 3

Individual treatment recommendations are best made within the context of a multi-disciplinary team and should reflect risk group, patient age, baseline symptoms, medical comorbidities and personal preferences.[10] Management options for men with localised prostate cancer according to risk group are outlined in *Table 2.*[11]

Table 2. Management options for localised prostate cancer according to risk group

	Low risk	Intermediate risk	High risk
Management options	• Active surveillance • RP • EBRT • LDR BT	• RP • EBRT +/– ADT • EBRT + HDR BT +/– ADT	• EBRT + ADT • EBRT + HDR BT + ADT • RP +/– adjuvant/ salvage EBRT +/– ADT

ADT, androgen deprivation therapy; BT, brachytherapy; EBRT, external beam radiation therapy (also called radiotherapy); HDR, high dose rate; LDR, low dose rate; PSA, prostate specific antigen; RP, radical prostatectomy

Low-, intermediate- and high-risk groups are defined according to D'Amico classification.[12]

Predictive nomograms, such as the Memorial Sloan Kettering Cancer Centre prostate cancer nomogram, are used to estimate patients' risk of organ-confined disease, extra-prostatic extension, seminal vesicle invasion, lymph node involvement and 5-year biochemical control rates with treatment.[13]

ANSWER 4

Paul has unfavourable intermediate localised prostate cancer, which predicts for significant cancer-related death.[14]

Given Paul's overall good health and life expectancy of >10 years, an active treatment strategy with radiation therapy/high dose rate brachytherapy or surgery is indicated.

Active surveillance or androgen deprivation therapy alone are not appropriate options given Paul's age, risk stratification, life expectancy and performance status. Left untreated, the risk of symptomatic local progression and distant metastasis is unacceptably high.

ANSWER 5

External beam radiation therapy and radical prostatectomy are the

two most commonly used treatment modalities but have never been compared in a randomised trial. Non-randomised data are prone to selection bias but suggest equivalence in terms of prostate cancer control in the majority of cases.[12,15,16] Therefore, differences in risk and side effect profiles between the two modalities (*Table 3*) and their relative importance as attributed by an individual patient are likely to influence treatment selection.[11]

Table 3. Comparisons between radical prostatectomy and radiation therapy[11]

Radical prostatectomy	External beam radiation therapy
In-patient stay usually <7 days, followed by recovery at home for 4 weeks. Potential complications: • anaesthetic and peri-operative risk • urinary incontinence • bladder neck (vesico-urethral) stricture • early erectile dysfunction • rectal injury • infertility • adjuvant external beam radiation therapy may be recommended for high-risk pathological features (involved margins, seminal vesicle involvement, extra-capsular extension)	Must be able to lie flat for 20 minutes. Potential complications: • urinary symptoms • bowel symptoms • late erectile dysfunction • side effects of neo-adjuvant androgen deprivation therapy (if used in combination with radiation therapy): – vasomotor effects (hot flushes) – fatigue – loss of libido – mood disturbance – weight gain – bone demineralisation • infertility • second malignancy (very rare) • difficulty with salvage treatment for local recurrence Outpatient treatment over 7–8 weeks, 10–15 minutes daily, Monday–Friday (weekends off)

ANSWER 6

Radiation therapy for localised prostate cancer has changed dramatically over the past two decades, resulting in improvements in disease control and treatment-related toxicity. Radiation therapy is delivered with a linear accelerator (linac), which generates megavoltage photon beams that can be orientated and shaped to match a patient's unique tumour position, size and shape. Each fraction takes 2–10 minutes to deliver, depending on body habitus and radiation therapy technique.[17] Treatment is delivered as an outpatient procedure and a team, including a radiation oncologist, specialist nurses and radiation therapists, monitors the patient regularly.

IMRT is now the standard of care across Australia, creating highly conformal treatments that maximise the dose delivered to the target while sparing normal tissues. IMRT uses technology that varies the number of photons (intensity) across the radiation beam, creating dose distributions that tightly conform to the target volume and are sculpted to reduce the dose to nearby organs at risk such as the bowel and bladder.

Currently, most Australian men with localised prostate cancer treated with curative-intent using radiation therapy receive a conventionally fractionated, dose-escalated treatment whereby 1.8–2 Gray (Gy) per fraction is given five times per week for a total dose of at least 74 Gy in 37 fractions over 7.5 weeks.[18] Doses above 74 Gy decrease the risk of biochemical failure and improve prostate-cancer-specific survival, but not overall survival.[19]

To account for organ motion during radiation therapy, patients may be asked to regulate their bowel habits during the planning and treatment period through dietary modification and/or medication. Before each fraction is delivered, patients repeat the same routine, such as holding a comfortably full bladder and maintaining an empty rectum. To enable dose escalation and greater sparing of organs at risk (bladder and rectum), inert radiopaque fiducial seeds may be permanently inserted into the prostate under transrectal or transperineal ultrasound guidance. The seeds can be used as a surrogate for prostate position, and displacement can be estimated before each fraction. Shifts of the treatment table can be made to reposition the patient and seeds (and therefore prostate). To visualise motion, dedicated cone beam CT equipment can acquire a 3D CT image in real-time in the treatment position just before treatment. Resolution is not of diagnostic quality but enables visualisation of soft tissues (prostate, bladder and rectum) so that table shifts can be made if needed.

The majority of men undergoing radiation therapy for localised prostate cancer experience mild acute side effects during treatment. The most common acute toxicities include irritative and obstructive urinary symptoms due to radiation cystitis, and rectal urgency and temporary loosening of stools due to radiation proctitis. Acute toxicities tend to resolve in the 1–2 weeks following completion of therapy. Importantly, <10% of patients experience significant late urinary or bowel symptoms.[20]

ANSWER 7

Androgen deprivation therapy (ADT) may be given before, during and/or after radiation therapy to cytoreduce and radiosensitise prostate cancer cells. Data from randomised trials[21–23] support the use of ADT in men with unfavourable intermediate-risk and high-risk disease. Significant improvements in biochemical progression free, prostate-cancer-specific and overall survival have been shown.[21–23]

However, ADT may be associated with side effects that differ from those of radiation therapy and include vasomotor effects (hot flushes), fatigue, loss of libido, mood disturbance and bone demineralisation.[11]

Hypogonadism from ADT will decrease PSA levels until return of normal testosterone levels after ADT is ceased. The time to recovery of testosterone (after ADT is ceased) is highly variable and confounds PSA interpretation. For this reason, ongoing specialist involvement is advised to help interpret biochemical control over the long term.[24]

ANSWER 8

Patients treated with radiation therapy for localised prostate cancer require long-term follow-up with a radiation oncologist and/or urologist, to ensure resolution of acute toxicity, assessment of late toxicity and

monitoring of biochemical response with PSA.

Standard follow-up schedules are adapted to the individual's risk profile. Treatment response is assessed primarily according to PSA levels, and can take many months or even years to reach a nadir after radiation therapy (especially if neo-adjuvant ADT is not used). Typically, PSA monitoring is performed every 6 months for 5 years in combination with DRE.[24]

There is no role for surveillance imaging of the prostate in asymptomatic men with low post-treatment PSA levels.

RESOURCES FOR PATIENTS

- Targeting Cancer is an initiative of the Royal Australian and New Zealand College of Radiologists to improve the awareness of radiation therapy for cancer. The website provides up-to-date resources and general information for patients and healthcare professionals and can facilitate referral to a radiation oncologist nearby, www.targetingcancer.com.au
- Cancer Council Australia:
  - www.cancer.org.au/about-cancer/early-detection/early-detection-factsheets/prostate-cancer.html
  - www.cancer.org.au/content/pdf/HealthProfessionals/ClinicalGuidelines/Localised_Prostate_Cancer_book_Web_2010.pdf
- Prostate Cancer Foundation Australia, www.prostate.org.au/publications-resources/resources/understanding-prostate-cancer-treatments-and-side-effects/

RESOURCES FOR DOCTORS

- Andrology Australia, www.andrologyaustralia.org
- Cancer Council Guidelines,www.cancer.org.au/health-professionals/clinical-guidelines

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CASE 5

IVAN HAS A SORE BACK AND SHOULDER

Ivan, a widower aged 76 years, makes an appointment to see you. Recently, he moved into your area to be closer to his daughter. Ivan was diagnosed with prostate cancer about 2 years ago. At that time, he had some problems passing urine and he thought there were a 'couple of spots' on his bones. He was commenced on 'injections' and has had no further lower urinary tract symptoms. He complains of pain in his lower back and his left shoulder. The pain has been getting steadily worse. He asks you for medication to help with the pain.

QUESTION 1

What is your initial approach to this consultation?

FURTHER INFORMATION

The history reveals that Ivan became aware of pain in the lumbar spine about 4 weeks ago, after doing some work in the garden. The pain has increased gradually in severity. The pain in his shoulder started at about the same time. The pain was made worse by movement. Ivan tried paracetamol, which provided some initial relief but is no longer helping. Ivan rates the pain at 8 out of 10.

Your examination reveals an elderly man who is in discomfort. There is tenderness to palpation at the distal left clavicle and in the lower lumbar spine. There is no evidence of lower limb weakness or paraesthesia.

QUESTION 2

What is your initial diagnostic impression? What tests would you order to confirm your impression?

QUESTION 3

What would you recommend for Ivan while you await these investigations?

FURTHER INFORMATION

Initially, Ivan was diagnosed with low-volume metastatic prostate cancer at his local public hospital and he has been receiving 6-monthly injections of a gonadotropin-releasing hormone agonist. Ivan's prostate-specific antigen (PSA) level has been rising very slowly over the past 12 months, but his most recent PSA was significantly elevated at 200 µg/mL (normal reference range: 0.3-7.5 ng/mL). His serum testosterone is suppressed at 0.01 nmol/L (normal reference range: 9.0–35.0 nmol/L). His serum calcium and alkaline phosphatase levels are within normal range. A plain X-ray of the left shoulder shows a mixed lytic-sclerotic lesion destroying the distal end of the left clavicle. A plain X-ray of the lumbar spine shows sclerotic lesions in lumbar vertebrae. A nuclear medicine bone scan shows widespread uptake consistent with metastases including uptake in the left clavicle and lumbar vertebral bodies 3–5. The results of the investigations are consistent with progressive castrate-resistant metastatic prostate cancer.

QUESTION 4

What is your management plan for Ivan now?

FURTHER INFORMATION

Ivan returns 6 months later for review. He is feeling well, is no longer experiencing any lower back pain and has stopped taking regular analgesia. However, although he initially experienced good relief of pain in his left shoulder, he has noted some increasing pain over recent weeks.

QUESTION 5

What might you do next?

CASE 5 ANSWERS

ANSWER 1

It is important to take an appropriate history and perform a suitable examination.

Questions related to Ivan's history may include:

- When did the pain start and were there any precipitating factors?
- How severe has the pain been, on average, during the past week, on a scale of 0 to 10, where 0 is no pain and 10 is the worst pain you can imagine?
- Where is the pain mainly felt and does it radiate to other parts of the body?
- What does the pain feel like – aching, sharp, stabbing, burning?
- Are there other factors that make the pain worse or better?
- Are there any associated neurological symptoms, such as lower limb weakness or paraesthesia, or difficulties with bladder or bowel function?

The history should also elicit:

- details about the extent of Ivan's cancer and treatments he has received previously
- details about medical/psychiatric comorbidities and concomitant medications
- whether Ivan is experiencing any troublesome lower urinary tract symptoms, haematuria or difficulties with his bowels
- whether Ivan is coping at home or requires any assistance with activities of daily living.

Examination should focus on:

- identifying the sites of pain
- eliciting any signs of neurological compromise (eg lower limb paraesthesia or weakness).

ANSWER 2

Ivan's history and examination suggests that he has painful bony secondaries from his prostate cancer.

Investigations should include testing for serum PSA and testosterone levels to give an indication of the activity of his prostate cancer and whether it is still responding to hormonal manipulation. A rising PSA in the presence of a suppressed serum testosterone level indicates that the cancer has become castrate resistant.[1] Blood tests should also include serum calcium and alkaline phosphatase levels. Widespread bone metastases can cause an elevation in levels of serum calcium and alkaline phosphatase, and hypercalcaemia can be associated with symptoms of anorexia, nausea, constipation, muscle weakness, fatigue, and poor concentration.[2] Biochemical analysis of renal and hepatic function should also be undertaken as appropriate dosing of opioid analgesics can be affected by these results. The commonly prescribed opioid analgesics are metabolised in the liver and excreted via the kidneys. Thus, in patients with liver disease, starting doses for opioids should be lower than normally prescribed and caution should be used in prescribing at usual dosing intervals.[3] Furthermore, while the pharmacokinetics of morphine are unchanged in renal insufficiency, accumulation of active metabolites can occur, leading to prolongation of side effects.[4,5] Deteriorating renal function could also indicate that there is an element of renal tract obstruction.

In addition, plain X-rays of the painful sites (left shoulder and lumbar spine), should be obtained to assess the structural integrity of the affected bones. A nuclear medicine bone scan should be obtained to assess the full extent of the bony metastatic burden and to identify other sites of disease that may benefit from prophylactic therapy. For example, a deposit in a weight-bearing long bone may place that bone at risk of fracture. If there is concern about potential neurological compromise, for example, lower limb weakness or paraesthesia, then urgent referral for magnetic resonance imaging (MRI) is recommended.[6]

ANSWER 3

Ivan rates his pain as moderately severe (8 out of 10) with minimal benefit from paracetamol. Following assessment of Ivan's hepatic and renal function, he would benefit from the judicious introduction of an oral opioid analgesia, in association with a regular aperient. Cancer Council Australia provides guidelines for management of cancer pain in adults.[7]

ANSWER 4

Ivan should be referred to a radiation oncologist. Radiation therapy directed at sites of painful bone metastases achieves significant pain relief in up to 80% of patients, and up to one-third of patients experience complete relief of pain in the targeted area.[8]

Following consultation with the radiation oncologist, Ivan will undergo a planning or simulation session. During this session, computed tomography (CT) scans of the affected areas will be taken to obtain precise anatomical information of the areas to be treated and to allow for the design of the radiation fields and the calculation of the radiation dose needed to treat the affected areas. The actual radiation treatment can commence either on the day of planning or shortly thereafter.

Radiation therapy to palliate bone pain can be given either in one treatment (or fraction) or up to ten fractions. All regimens provide excellent pain control with minimal side effects.[9] A shorter course of treatment is more convenient for the patient and their caregivers whereas the longer course has a lower incidence of re-treatment to the same site.

When Ivan has the radiation treatment, it will feel as though he is having a plain X-ray; that is, he will not feel or see anything. The treatment is generally very well tolerated. Ivan may experience some slight 'flare' of pain in the 24 hours after radiation therapy is given and he should be encouraged to take additional pain relief if this occurs.[10] Sometimes, a short course of dexamethasone is also prescribed to prevent this 'flare'.[10] Occasionally, treatment to the lumbar spine may cause transient diarrhoea.[11]

Ivan may not start to experience pain relief for up to 7–10 days after the completion of treatment and the maximum benefit may not be seen for 2–3 weeks after treatment. Ivan should be encouraged to continue taking his analgesics during this time.

As Ivan's prostate cancer is progressing, he will also be commenced on second-line hormonal therapy and an anti-bone resorption agent.[12]

ANSWER 5

As Ivan is experiencing further pain in his left shoulder, he should be recommenced on appropriate analgesia as recommended by Cancer Council Australia guidelines[7] and referred to the treating radiation oncologist. Ivan had previously received a single fraction of radiation therapy to his left shoulder. Up to 20% of patients who are treated with a single fraction may require re-treatment to the same site, whereas 8% of patients who received longer courses of treatment require re-treatment.[13–15]

Given that Ivan's disease is progressing on androgen deprivation therapy, Ivan should be considered for further systemic therapy options and a referral to medical oncology will be made. Six therapies have now been shown to prolong survival in men with metastatic castrate resistant prostate cancer.[1] In addition, osteoclast-targeted agents (such as denosumab or zoledronic acid) should be considered as they have been proven to reduce the risk of skeletal related events such as fractures, surgery to bone and spinal cord compression.[1]

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ACTIVITY ID: 31019

CANCER

This unit of *check* is approved for 6 Category 2 points in the RACGP QI&CPD program. The expected time to complete this activity is 3 hours and consists of:

- reading and completing the questions for each case study
- you can do this on hard copy or by logging on to the *gplearning* website, http://gplearning.racgp.org.au
- answering the following multiple choice questions (MCQs) by logging on to the *gplearning* website, http://gplearning.racgp.org.au
- you must score ≥80% before you can mark the activity as 'Complete'
- completing the online evaluation form.

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QUESTION 1

Tilly is 41 years of age and presents with a pigmented lesion on her face. She had a melanoma on her leg, which was removed, at the age of 15 years. She has several pigmented naevi in other areas (neck, arms and back). Her cousin was diagnosed with a melanoma recently, and her grandfather has non-melanoma skin cancer.

How does Tilly's history affect her risk of developing a melanoma?

A. Having a relative with melanoma doubles her risk.

B. Having a relative with non-melanoma skin cancer increases her risk 4-fold.

C. Having several pigmented naevi in other areas increases her risk.

D. A past history of melanoma increases her risk 20-fold.

QUESTION 2

You refer Tilly to a skin specialist. Resection confirms that she has stage 1 melanoma (1.6 mm thickness).

How should Tilly be managed now?

A. Tilly should be followed up annually for the next 5 years.

B. Tilly should be followed up every 3–4 months.

C. Tilly does not require follow-up as most patients detect their own recurrences.

D. Tilly does not require any testing unless she develops symptoms.

QUESTION 3

Terrence is 45 years of age and comes to see you for a general check up. He is in good health and has had no symptoms, but has a family history of cancer: his father and uncle had prostate cancer at the age of 70 and 60 years, respectively, and his sister was diagnosed with familial breast cancer at the age of 40 years. He asks if he should be tested for prostate cancer.

Which of the following is the best response to Terrence's question?

A. Advise Terrence to have a prostate-specific antigen (PSA) test, given his family history of cancer.

B. Caution Terrence about the risks of PSA testing.

C. Advise Terrence that he will need to be tested only if he develops lower urinary tract symptoms.

D. Discuss the pros and cons of PSA testing with Terrence and assist him in making an informed decision about whether to have the test.

QUESTION 4

Which aspect of Terrence's history places him at a high risk of developing prostate cancer?

A. His age

B. His father having prostate cancer

C. His father and uncle having prostate cancer

D. His sister having familial breast cancer

QUESTION 5

Rodney, 55 years of age, presents with lower urinary tract symptoms. A digital rectal examination (DRE) detects a nodule in one lobe of the prostate gland, consistent with T2b disease. Further testing reveals a PSA level of 15 ng/mL and a Gleason score of 7, but no metastases, confirming a diagnosis of localised prostate cancer.

How would Rodney's cancer be classified?

A. Low risk

B. Intermediate risk

C. Intermediate-to-high risk

D. High risk

QUESTION 6

What are the management options for Rodney?

A. Active surveillance

B. Androgen deprivation therapy

C. Low dose rate brachytherapy

D. Radical prostatectomy

QUESTION 7

Monique, 48 years of age, presents with a lump in her left breast. She first noticed the lump 5 weeks ago but ignored it because it seemed quite small. In the past week, however, it has increased in size and the area is now painful.

Which of the following is the best course of action in assessing the lump?

A. Arrange for Monique to have a mammogram and refer her to a specialist.

B. Do a physical examination, arrange for Monique to have breast imaging and non-excision biopsy, and refer her to a specialist.

C. Arrange for Monique to have breast imaging and non-excision biopsy, and refer her to a specialist if the results confirm breast cancer.

D. Refer Monique to a specialist.

QUESTION 8

Monique is referred to a specialist. You arrange ultrasound, mammogram and fine-needle aspiration biopsy to be performed while awaiting specialist review. While waiting for her appointment with the specialist, which of the following might Monique require from you?

A. core biopsy

B. psychological support

C. assessment for spread of the cancer

D. axillary node FNA

QUESTION 9

Chester, 60 years of age, presents with a 2-week history of back pain. He has taken paracetamol and a non-steroidal anti-inflammatory drug, but neither agent has been effective and the pain has been getting worse. He has also had symptoms of muscle weakness, anorexia and nausea. Chester was diagnosed with prostate cancer one year ago and you suspect that he has painful bone metastases.

Which of the following test results confirms the diagnosis?

A. Elevated levels of serum calcium and alkaline phosphatase

B. Rising PSA levels

C. Deteriorating renal function

D. Suppressed serum testosterone

QUESTION 10

Which of the following statements regarding radiation therapy for cancer-related bone pain is TRUE?

A. Radiation therapy is most effective when given in one fraction, compared with longer courses.

B. Treatment can be given as a single fraction or up to five fractions.

C. A shorter course has a lower incidence of re-treatment to the same site.

D. Treatment to the lumbar spine may cause transient diarrhoea.

check

Independent learning program for GPs