RACGP

Curriculum and syllabus for Australian general practice (7th edition)

Haematological presentations

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The Royal Australian College of General Practitioners Ltd

100 Wellington Parade

East Melbourne, Victoria 3002

Tel 03 8699 0414

Fax 03 8699 0400

www.racgp.org.au

ABN 34 000 223 807

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We acknowledge the Traditional Custodians of the lands and seas on which we work and live, and pay our respects to Elders, past, present and future.

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Haematological presentations

Context

GPs play an essential role in the diagnosis and ongoing management of patients with acute and chronic haematological conditions. Full blood count and blood chemistry are some of the most common pathology tests ordered in general practice and venesection is a common office-based procedure.[1]

Anaemia is a significant issue in Australia, affecting approximately 8% of children aged less than 5 years, 15% of non-pregnant premenopausal women and 12% of pregnant women in Australia.[2] Iron deficiency specifically is a very common haematological presentation in general practice, with 22.3% of women in Australia having depleted iron stores.[3] Iron deficiency anaemia is one of 22 conditions in Australia for which hospitalisation is considered potentially preventable[4] and has important implications in conditions such as heart failure, chronic kidney disease, and pregnancy. Regular health assessments and antenatal care provide an opportunity to identify patients at risk of anaemia, highlighting the importance of the relationship between the GP, patient, their family, and the community.[5]

Haematological malignancies account for approximately 12% of all cancers.[6] Given that these malignancies can present with nonspecific symptoms such as fatigue or weight loss, the GP's ability to recognise early warning signs and initiate timely investigations is critical for improving outcomes.[7,8] GPs are also central to coordinating care throughout the patient's diagnostic and treatment journey, ensuring continuity between specialist haematology services and primary care.

Bleeding and clotting disorders also represent an important cause of haematological pathology. With increasing ethnic diversity in the Australian population, the incidence of inherited haemoglobinopathies like thalassaemia and sickle cell disease is likely to become more prevalent.[9] Screening for an underlying coagulopathy or a prothrombotic state is also an important part of the GP's role.

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Learning outcomes

The GP is able to:

- identify and appropriately manage emergency haematological presentations
- diagnose and manage common anaemias
- understand the approach to abnormal bleeding and bruising
- understand the approach to abnormal blood counts detected on routine testing
- understand the approach to thromboembolic disease
- appropriately investigate for possible haematological malignancies
- understand and engage patients in screening, vaccination, and preventative strategies for specific haematological situations (eg post-splenectomy, haemoglobinopathies)
- identify the haematological effects of commonly prescribed medications (eg aspirin and bleeding, combined oral contraceptive pill and thrombosis risk)
- conduct routine haematological procedures in general practice.

Key areas of learning

Diagnose, investigate and manage emergency haematological presentations, including:

- severe anaemia
- febrile neutropaenia / neutropaenic sepsis
- acute leukaemia presenting with pancytopaenia or bleeding
- major haemorrhage due to coagulopathy, anticoagulants, or thrombocytopaenia
- massive pulmonary embolism.

Diagnose, investigate, and manage various anaemia subtypes, including:

- iron deficiency anaemia
- anaemia of chronic disease
- megaloblastic anaemia
- haemolytic anaemia
- haemoglobinopathies.

Understand the approach to abnormal bleeding and bruising caused by:

- immune thrombocytopaenia
- thrombocytopaenia due to drugs, infections, or bone marrow failure
- coagulation disorders (haemophilia, von Willebrand disease, acquired coagulopathy)
- liver disease-associated coagulopathy
- anticoagulant or antiplatelet therapy.

Understand the approach to thromboembolic disease, including:

- deep vein thrombosis
- pulmonary embolism
- superficial thrombophlebitis
- inherited thrombophilia (eg factor V Leiden, protein C/S deficiency, antithrombin deficiency)
- acquired thrombophilia (antiphospholipid antibody syndrome, malignancy-related thrombosis).

Diagnose, investigate and manage haematological malignancies, including:

- acute leukaemia
- chronic leukaemia
- lymphoma (Hodgkin and non-Hodgkin)
- myeloma
- myelodysplastic syndromes.

Understand the approach to abnormal blood counts detected on routine testing, including:

- neutrophilia or neutropaenia

- leukocytosis or leukopaenia
- thrombocytosis or thrombocytopaenia
- pancytopaenia
- macrocytosis or microcytosis
- polycythaemia
- raised ferritin, including haemochromatosis
- reticulocytosis
- paraproteins, including Monoclonal Gammopathy of Uncertain Significance (MGUS).

Support shared understanding and decision-making in appropriate preventive care, including:

- haemoglobinopathy screening in high-risk populations (preconception and antenatal)
- immunisation and infection prevention in immunocompromised or post-splenectomy patients
- monitoring and counselling patients on long-term anticoagulation or antiplatelet therapy
- secondary prevention of thromboembolic disease
- lifestyle and risk reduction advice for patients with haematological malignancy or bone marrow suppression.

Identify, investigate and appropriately refer for abnormal examination findings, including:

- lymphadenopathy
- splenomegaly
- jaundice
- purpura, petechiae, and ecchymoses.

Conduct routine haematological procedures in general practice, including:

- perform routine phlebotomy
- insert a cannula
- perform an intravenous iron infusion, including the management of potential complications
- perform venesection for haemochromatosis.

Evaluate and manage a patient with lymphadenopathy, with or without splenomegaly.

Opportunities for learning

Words of wisdom

- Many incidental haematological findings may have a significant underlying blood disorder like persistent lymphocytosis (chronic leukaemias) or very high ESR with increased globulins (plasma cell disorders like smouldering myeloma or MGUS).
- It's advisable to document in a patient's record any asymptomatic haematological findings, such as inherited haemoglobinopathy, to decrease their risk of an adverse outcome if, for example, they require a blood transfusion.
- Become familiar with guidelines for withholding a patient's antiplatelet and anticoagulant medications when they have elective surgery.
- Become familiar with patient blood management guidelines and protocols when working in rural or remote locations.
- A normal ferritin level doesn't rule out an iron deficiency anaemia, as it is an acute phase protein elevated in an infection, inflammation or malignancy. In iron deficiency anaemia without an obvious cause in patients over the age of 50, consider gastrointestinal malignancy.

Learning strategies

On your own

From your patient database, identify three patients with haemochromatosis who you have managed in the past 12 months. Check the local hospital recommendations or Therapeutic Guidelines for management of haemochromatosis. Consider your practice against the guidelines.

- *What did you do well? What could you improve?*
- *Was there anything you were uncertain about, and how did you manage that (eg a patient who doesn't want venesection but it is indicated by guidelines)?*

From your patient database, identify three of your patients who required any surgical procedure while being on oral anticoagulants. Review guidelines on how to manage anticoagulation during the peri-operative period. Consider your practice against the guidelines.

- *How did you manage the situation? How did you manage uncertainty? What resources did you use to manage the situation?*
- *Did you find any gaps in your knowledge? How do you plan to apply the principles you learnt in future?*

Generate an immunisation plan for an individual presenting with functional asplenia or splenectomy.

- *How many of the recommended immunisations are available via the National Immunisation Program, your state or territory, or the PBS?*

With a supervisor

Have a case-based discussion with your supervisor about a recent patient who had a large volume haematemesis.

- *How would you manage a patient with high volume bleeding? What if you were working in a remote community? How would you manage the situation if the patient identified as Aboriginal or Torres Strait Islander?*
- *How would you manage an urgent hospital transfer if the patient had limited English?*
- *Ask your supervisor for feedback.*
- *Where did you do well, where could you have done better, and what resources will you use to fill any gaps in your knowledge?*

Role-play the following clinical scenario with your supervisor. One of your patients, five-year-old Alan, has been diagnosed with acute leukaemia. His patients are anxiously waiting to see you about his diagnosis.

- *How would you explain Alan's diagnosis to his parents? How do you plan to support them?*
- *Would you do anything differently if the family was Aboriginal or Torres Island Strait Islander?*
- *If his parents don't agree with your suggestion to refer him to a haemato-oncologist, how would you manage this situation?*
- *Ask your supervisor for feedback.*
- *How would you handle a similar situation in the future?*

Present an education session to your supervisor on 'Investigating an abnormal white blood cell count in an asymptomatic patient'.

- *What resources would you use for the session? Where would you look for guidelines?*
- *What did you learn from this session? How will you implement your learning in your day-to-day practice?*

In a small group

Discuss the following scenario with your fellow learners: You identify an increased lymphocyte count from a patient's routine health check.

- *What history, examination and further investigations you would consider for further evaluation of this abnormal result?*
- *If the patient is anxious, what strategies would you use to convey the results?*
- *How would you decide whether to refer the patient to a haematologist?*
- *Do a literature search for managing an incidental finding of isolated increased lymphocyte count and compare your practice against the recommended guidelines.*

Discuss the following scenario with a colleague. A young female patient presents with easy bruising and bleeding, even from minor injuries.

- *List the differential diagnoses for her easy bruising and the clinical clues for possible causes. How would you evaluate her in your practice?*
- *What resources would you use to learn more about bleeding disorders?*
- *Does your colleague have any other ideas? What have you learnt from this exercise that you will take into your clinical practice?*

Identify common haematological presentations in high-risk populations, including the following examples. Each present on a specific population, presentations, and relevant resources:

- *Anaemia in Aboriginal and Torres Strait Islander peoples.*
- *Haemoglobinopathies in certain immigrant populations; for example, individuals from South-East Asian, Middle Eastern, sub-Saharan Africa and Mediterranean regions.*
- *Nutritional deficiency-related anaemias in refugee populations.*
- *Pregnancy.*

With a friend or family member

Explain iron deficiency in both children and adults to a friend or family member. Include the importance of iron for children's development, and how a diet of iron-rich foods can be used to treat iron deficiency.

- *What resources did you use to help you prepare?*
- *What practical suggestions did you have to help the parents increase iron in their child's diet? Were you surprised by the types of food which contain high levels of iron?*
- *Ask your friend or family member to explain back to you how diet can be used to treat iron deficiency. Did they find your explanation easy to understand?*
- *What lessons did you learn that you could incorporate in your future practice?*

Ask a friend or family member what they know about leukaemia. Offer to explain the different types of leukaemia to them.

- *How did you go explaining leukaemia in simple terms? What resources did you use to prepare? Ask your friend or family member how well they understood your explanation.*
- *What did you learn that you can use in your clinical practice?*

Case example

Lisa, a 15-year-old girl, is brought in by her mother because she has been looking pale and feeling lethargic for the past three months.

In a case-based discussion, questions relating to each role could be:

Communicator

- How would you discuss the importance of investigation and treatment with Lisa and her mother?
- How would your communication change if Lisa was from a culturally and linguistically diverse background?
- How would you sensitively ask about possible dietary restrictions, menstruation patterns, or other behaviours that may affect iron status?
- How do you explain blood tests and procedures to a 15-year-old in an age-appropriate way?

Clinician

- What are the acute conditions that must not be missed in a patient presenting with pallor and fatigue?
- What other symptoms would it be important to ask Lisa about?
- When would you consider referring Lisa directly to hospital?
- What are your differential diagnoses for Lisa?
- How would your management change if Lisa had a known chronic condition (eg inflammatory bowel disease)?
- How would your approach change if Lisa had a family history of thalassaemia?
- What investigations would you organise initially?
- How would your advice differ if Lisa was a young child or an older adult woman with the same symptoms?
- What, if any, lifestyle recommendations would you give while awaiting investigations?
- How would you involve Lisa in discussions about her health?
- How might your management be affected if you were working in a rural or remote setting?

Health advocate and leader

- How do you ensure an effective recall system to monitor her results and ongoing care?

Professional

- How would you respond if Lisa or her mother refused investigations or treatment?

Scientist, educator and researcher

- What resources or guidelines would you use to determine recommended prevention strategies, screening, and management for iron deficiency or anaemia in adolescents?

Learning resources

The curriculum website includes learning resources within each unit.

Assessment

Content in this unit will be assessed in a variety of ways.

Workplace based assessments

Mini-CEX	RCA	MSF	CBD	Reflective exercise	Audit	Mid and end term assessment

Fellowship examinations

AKT	KFP	CCE

KEY

- Expected to be assessed here always
- Often assessed here but not in every example / case / assessment
- May at times be here or contribute to the assessment

ABBREVIATIONS

Mini-CEX – Mini-clinical evaluation exercise

RCA – Random case analysis

MSF – Multi source feedback

CBD – Case-based discussion

AKT – Applied knowledge test

KFP – Key feature problem

CCE – Clinical competency exam