Optimal care pathway for people with myelodysplastic syndromes

Quick reference guide

The optimal care pathways describe the standard of care that should be available to all cancer patients treated in Australia. The pathways support patients and carers, health systems, health professionals and services, and encourage consistent optimal treatment and supportive care at each stage of a patient's journey. Seven key principles underpin the guidance provided in the pathways: patient-centred care; safe and quality care; multidisciplinary care; supportive care; care coordination; communication; and research and clinical trials.

This quick reference guide provides a summary for clinicians of the *Optimal care pathway for people with myelodysplastic syndromes* (MDS).

Please note that not all patients will follow every step of the pathway.

Support: Assess supportive care needs at every step of the pathway and refer to appropriate health professionals or organisations.

Step 1: Prevention and early detection

Prevention

The causes of MDS are not fully understood, and there is currently no clear prevention strategy.

Risk factors include:

- age (occurs mainly in people aged over 60)
- gender (MDS is more common in males)
- long-term exposure to environmental/occupational hazards such as benzene, tobacco smoke, insecticides and other toxins
- previous chemotherapy (alkylating agents and purine analogues), radiotherapy or ionising radiation
- an inherited predisposition to MDS in paediatric MDS patients with Down syndrome, Fanconi's anaemia and neurofibromatosis.

Early detection

Patients may be identified early when mild cytopenia is detected on a full blood examination. Other patients may present with symptoms such as fatigue, bruising or recurrent infections.

Some patients with cytopenia may not meet the criteria of MDS and may be categorised as having clonal cytopenia of uncertain significance. The clinical significance of this is uncertain, and follow-up with a GP for more severe cytopenia(s) may be appropriate.

Screening recommendations

Routine screening for MDS is not currently recommended in either the general population or in relatives of people with MDS.

General health checklist

- ❑ Recent weight changes discussed and recorded
- ❑ Alcohol intake and smoking status discussed and support offered if appropriate
- ❑ Physical activity recorded
- ❑ Referral to a dietitian, physiotherapist or exercise physiologist considered
- ❑ Sun smart advice

Step 2: Presentation, initial investigations and referral

The following signs and symptoms should be investigated:

- persistent tiredness and fatigue
- weakness
- shortness of breath with minimal exercise
- looking pale
- recurring infections, especially chest infections
- fevers
- sore mouth due to mouth ulcers
- easy bruising
- purpura – a rash of small red dots
- tendency to bleed from the nose and gums.

The presence of multiple signs and symptoms, particularly in combination with other underlying risk factors, indicates an increased risk of MDS.

Initial investigations include:

- patient history and physical examination
- blood tests to detect abnormalities and exclude other diagnoses – for example: full blood cell count and film review, reticulocyte counts, lactate dehydrogenase, autoimmune screen (ANA/ENA), blood group, B12/folate and iron studies, electrolytes, liver function, renal function, blood cell, haemolysis and thyroid function (where clinically appropriate) and serum electrophoresis and serologies for chronic viral infections like HCV, HBV and HIV.

Checklist

- ❑ Signs and symptoms recorded
- ❑ Investigations completed
- ❑ Supportive care needs assessed and referrals to allied health services actioned as required
- ❑ Patient notified of support services such as Cancer Council 13 11 20, Leukaemia Foundation 1800 620 420
- ❑ Referral options discussed with the patient and/or carer including cost implications

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Support: Assess supportive care needs at every step of the pathway and refer to appropriate health professionals or organisations.

Step 2: Presentation, initial investigations and referral continued

Referral options

At the referral stage, the patient's GP or other referring doctor should advise the patient about their options for referral, waiting periods, expertise, if there are likely to be out-of-pocket costs and the range of services available. This will enable patients to make an informed choice of specialist and health service.

A GP can safely monitor suspected MDS in certain cases where the patient has mild cytopenias and significant comorbidities.

Communication

The GP's responsibilities include:

- explaining to the patient and/or carer who they are being referred to and why
- supporting the patient and/or carer while waiting for specialist appointments
- informing the patient and/or carer that they can contact Cancer Council (13 11 20) or the Leukaemia Foundation (1800 620 420).

Timeframe

Results should be provided to the patient **within 4 weeks** or sooner if the person is acutely unwell.

The urgency of specialist referral depends on the severity of cytopenias and clinical presentation.

Patients should usually be referred **within 4 weeks** of receiving all initial test results. Cases that require urgent referral **within 2 weeks** of initial work-up include:

- severe cytopenias and recurrent infections needing antibiotics
- platelets < 30 × 10^9/L or bleeding symptoms even if platelets are above the threshold
- symptomatic unexplained anaemia or haemoglobin < 80 g/L.

Step 3: Diagnosis, staging and treatment planning

Diagnosis and staging

Diagnosis and prognosis of MDS is based on peripheral blood and bone marrow aspirate and trephine.

Investigations of the bone marrow aspirate may include:

- immunophenotyping
- cytogenetics, FISH studies (in some circumstances)
- molecular testing or a myeloid gene panel test in selected patients.

Other investigations and blood tests should be completed to exclude other causes of cytopenias and dysplasia.

Although MDS diagnosis is confirmed by a bone marrow biopsy, it may be reasonable to monitor some patients rather than proceed to bone marrow biopsy, depending on the severity of cytopenias, the patient's preference, age and comorbidities.

Genetic testing

An inherited predisposition panel may be appropriate in selected patients with MDS. This should be undertaken after counselling and discussion with a haematologist with experience in this area and/or a genetic counsellor.

Treatment planning

If indicated for the patient, the multidisciplinary team should meet before recommending a definitive treatment plan.

Research and clinical trials

Consider enrolment where available and appropriate.

See the OCP resources appendix and relevant steps for clinical trial resources relevant to MDS.

Communication

The lead clinician's[1] responsibilities include:

- discussing a timeframe for diagnosis and treatment options with the patient and/or carer
- explaining the role of the multidisciplinary team in treatment planning and ongoing care

Checklist

- ❑ Diagnosis confirmed
- ❑ Performance status and comorbidities measured and recorded
- ❑ Where appropriate, patient discussed at a multidisciplinary meeting and decisions provided to the patient and/or carer
- ❑ Clinical trial considered
- ❑ Supportive care needs assessed and referrals to allied health services actioned as required
- ❑ Referral to support services (e.g. Cancer Council, Leukaemia Foundation)
- ❑ Treatment costs discussed with the patient and/or carer

1 Lead clinician – the clinician who is responsible for managing patient care.
The lead clinician may change over time depending on the stage of the care pathway and where care is being provided.

Support: Assess supportive care needs at every step of the pathway and refer to appropriate health professionals or organisations.

Step 3: Diagnosis, staging and treatment planning continued

- encouraging discussion about the diagnosis, prognosis, advance care planning and palliative care while clarifying the patient's wishes, needs, beliefs and expectations, and their ability to comprehend the communication
- providing appropriate information and referral to support services as required
- communicating with the patient's GP about the diagnosis, treatment plan and recommendations from multidisciplinary meetings.

Timeframe

The urgency of investigations depends on the severity of cytopenias and clinical presentation. Bone marrow biopsy results and ancillary investigations are usually returned **within two weeks**. Specialised testing such as cytogenetics and molecular tests may take longer.

Step 4: Treatment

All patients should receive supportive therapies, including education, active surveillance and monitoring, transfusions as appropriate and prompt infection control. Some lower risk MDS patients (not on any active interventions) may be suitable for monitoring and surveillance with their GP. The range of disease-specific/directed additional treatment options varies across different risk groups depending on age and comorbidities.

Establish intent of treatment

- Curative
- Anti-cancer therapy to improve quality of life and/or longevity without expectation of cure
- Symptom palliation

Supportive therapies will be required by all MDS patients. It may be the only long-term treatment needed for those with lower risk disease or those who are older, unfit or don't respond to other treatments. This can include red blood cell transfusions, platelet transfusions or tranexamic acid, infection management and iron chelation therapy.

Systemic therapy options may vary for lower or higher risk MDS patients. In patients with lower risk MDS, available treatment options include lenalidomide, hypomethylating agents and immunosuppressive therapy. Anaemia is the most common cytopenia for lower risk MDS and erythropoiesis-stimulating agents may be used as first-line therapy.

In patients with higher risk MDS, standard treatment options include hypomethylating agents (azacitidine and decitabine), AML induction chemotherapy (in those with a high blast count who are eligible for intensive therapy) and haematopoietic stem cell transplantation.

Allogeneic stem cell transplantation (allo-SCT) is the only potentially curative treatment for MDS. Patients with higher risk MDS may benefit from allo-SCT close to the time of diagnosis. Depending on the patient's goals of therapy, consider proceeding to transplantation as soon as feasible after an optimal donor is found.

Palliative care

Early referral to palliative care can improve quality of life and in some cases survival. Referral should be based on need, not prognosis. For more information, visit the Palliative Care Australia website <www.palliativecare.org.au>.

Communication

The lead clinician and team's responsibilities include:

- discussing treatment options with the patient and/or carer including the intent of treatment as well as risks and benefits
- discussing advance care planning with the patient and/or carer where appropriate
- communicating the treatment plan to the patient's GP
- helping patients to find appropriate support for exercise programs where appropriate to improve treatment outcomes.

Checklist

- ❑ Intent, risk and benefits of treatment discussed with the patient and/or carer
- ❑ Treatment plan discussed with the patient and/or carer and provided to GP
- ❑ Supportive care needs assessed and referrals to allied health services actioned as required
- ❑ Early referral to palliative care considered and advance care planning discussed with the patient and/or carer

Timeframe

For symptomatic patients with higher risk disease, disease-specific therapy should begin **within the first 6 weeks** of initial specialist consultation.

Potential stem cell transplantation candidates should be referred to a bone marrow transplant specialist **as soon as transplantation is considered a potential option**.

For lower risk MDS, the timing of treatment is guided by clinical presentation and urgency.

Support: Assess supportive care needs at every step of the pathway and refer to appropriate health professionals or organisations.

Step 5: Care after initial treatment and recovery

Survivors generally need regular, ongoing, long-term follow-up because treatments for MDS are generally not curative. The survivorship care plan may need to be updated to reflect changes in the patient's clinical status and psychosocial needs.

Provide a treatment and follow-up summary to the patient, carer and GP outlining:

- the diagnosis, tests and treatments received
- current toxicities
- interventions and treatment plans from other health professionals
- potential long-term and late effects of treatment and care of these
- supportive care services provided
- a follow-up schedule, including tests required and timing
- contact information for key healthcare providers who can offer support for lifestyle modification
- a process for rapid re-entry to medical services for suspected recurrence.

Communication

The lead clinician's responsibilities include:

- explaining the treatment summary and follow-up care plan to the patient and/or carer
- informing the patient and/or carer about secondary prevention and healthy living
- discussing the follow-up care plan with the patient's GP.

Checklist

- ❑ Treatment and follow-up summary provided to the patient and/or carer and the patient's GP
- ❑ Supportive care needs assessed and referrals to allied health services actioned as required
- ❑ Patient-reported outcome measures recorded

Step 6 Managing relapsed or progressive disease

MDS is generally incurable, except in patients who have a successful allo-SCT. Many patients will relapse or will progress after initial therapy, have worsening symptoms or transfusion dependence and/or progress to acute myeloid leukaemia.

Detection

Most refractory or progressive disease will be detected via routine follow-up or by the patient presenting with symptoms.

Treatment

Treatment will depend on the extent of relapsed or progressive disease, previous management and the patient's preferences. Options may include taking part in a clinical trial, treatment for acute myeloid leukaemia if the disease progresses to this and it is clinically appropriate, supportive medical management and/or palliative care.

Advance care planning

Advance care planning is important for all patients but especially those with relapsed or progressive disease. It allows them to plan for their future health and personal care and can guide future treatment if the patient is unable to speak for themselves.

Survivorship and palliative care

Survivorship and palliative care should be addressed and offered early. Early referral to palliative care can improve quality of life and in some cases survival. Referral should be based on need, not prognosis.

Communication

The lead clinician and team's responsibilities include:

- explaining the treatment intent, likely outcomes and side effects to the patient and/or carer and the patient's GP.

Checklist

- ❑ Treatment intent, likely outcomes and side effects explained to the patient and/or carer and the patient's GP
- ❑ Supportive care needs assessed and referrals to allied health services actioned as required
- ❑ Advance care planning discussed with the patient and/or carer
- ❑ Patient referred to palliative care if appropriate
- ❑ Routine follow-up visits scheduled

Step 7: End-of-life care

Palliative care

Consider a referral to palliative care. Ensure an advance care directive is in place.

Communication

The lead clinician's responsibilities include:

- being open about the prognosis and discussing palliative care options with the patient
- establishing transition plans to ensure the patient's needs and goals are considered in the appropriate environment.

Checklist

- ❑ Supportive care needs assessed and referrals to allied health services actioned as required
- ❑ Patient referred to palliative care
- ❑ Advance care directive in place

Visit the guides to best cancer care webpage <www.cancercareguides.org.au> for consumer guides. Visit the OCP webpage <www.cancer.org.au/OCP> for the optimal care pathway and instructions on how to import these guides into your GP software.

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