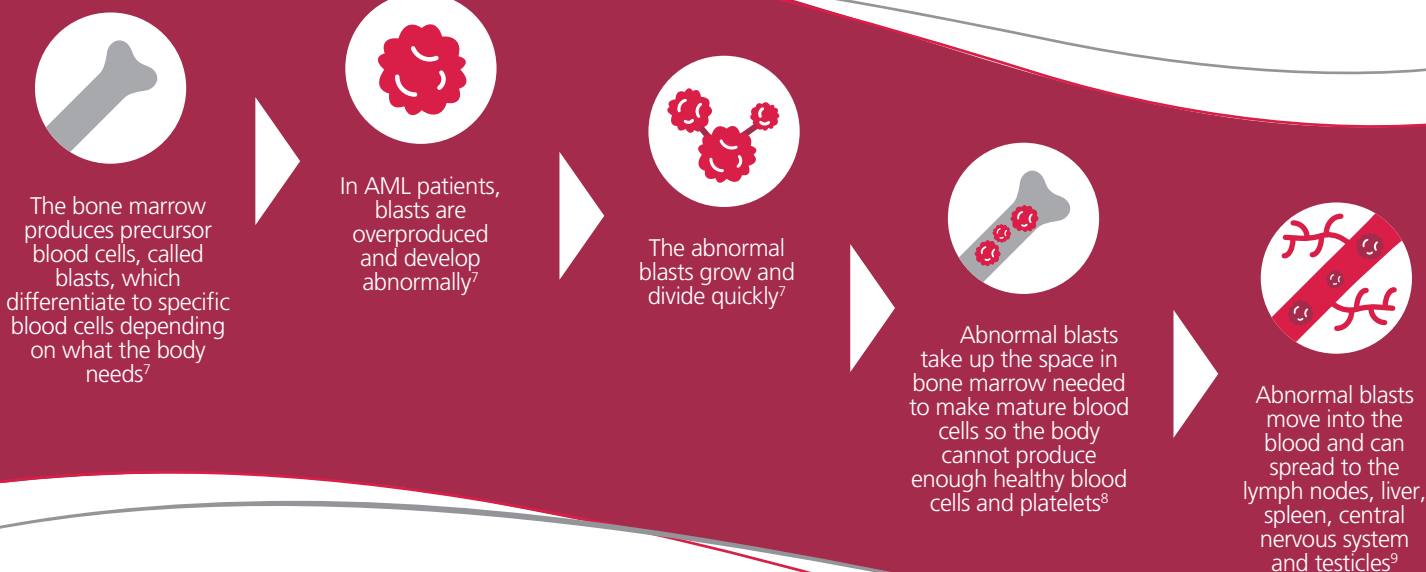


Understanding Acute Myeloid Leukaemia

What is acute myeloid leukaemia (AML)?

Acute myeloid leukaemia is a type of blood cancer.¹ It is one of the most common types of leukaemia in adults,² and accounts for 1% of all cancers in the UK.³ AML can occur at any age but it is most common in people aged 65 years and older.⁴

- In the UK, the incidence rate of AML was **4.8 per 100,000** in 2016.⁵ Around **3,100 people are diagnosed with AML in the UK annually**^{1,3}
- AML occurs slightly more frequently in men than women. For example, there were **1,700 new cases in men** and **1,300 new cases in women** in the UK in 2016³
- The 5-year relative survival rate for **AML is only 14% for men** and **16% for women** in the England⁶



Mutations in AML

AML is associated with various genetic mutations. The most common of which is **FLT3**, which affects over a third of AML patients.¹⁰

Management decisions for AML rely upon genetic testing to identify gene mutations and predict response to treatment¹¹

FLT3 mutations are known to be involved in the growth of cancer cells¹²

Patients with certain gene mutations, including FLT3 mutations, have lower survival rates^{13,14}

What are the symptoms?

Symptoms may be vague and non-specific:^{15,16}



How is AML diagnosed?¹⁷



Medical history and physical examination



Blood tests and bone marrow biopsy



Molecular markers

How is AML treated?

AML can progress quickly so treatment needs to start as soon as possible after first diagnosis. Treatment is in hospital and aims to get rid of as many leukaemia cells as possible.¹⁸ However, sometimes the disease returns following treatment. Relapsed AML occurs when a patient develops AML again, after previously achieving complete remission.¹⁹ When patients fail to achieve a complete response to treatment after at least two courses of intensive induction chemotherapy, this is called refractory AML.¹⁴

Current treatments for AML include:

1

Induction chemotherapy:^{18,20}

- The current standard of care for AML is intensive chemotherapy but this may not be suitable for some patients if they are unable to tolerate the side effects, and they are less likely to achieve complete remission^{14,15}
- Chemotherapy destroys normal bone marrow cells so most people develop dangerously low blood counts and may feel very ill

2

Consolidation chemotherapy:²⁰

- Further chemotherapy is given to destroy any remaining leukaemia cells and prevent AML returning

3

Bone marrow/Stem cell transplants:^{18,20}

- Another approach after induction therapy is to give very high doses of chemotherapy followed by a stem cell transplant; however, as this treatment is aggressive not all patients can be candidates for transplant
- Stem cell transplants have been found to reduce the risk of leukaemia returning compared to chemotherapy alone. A transplant is also more likely to have serious complications, including an increased risk of death from treatment

4

Targeted therapy:¹³

- In recent years, drugs that target specific parts of cancer cells or mutations have been developed which work differently from standard chemotherapy
- They can sometimes be helpful even when chemotherapy does not work, or they can be used along with chemotherapy to help it work better

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