NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE

Guideline scope

Haematological cancers: improving outcomes

Topic

This guideline will update the NICE cancer service guidance on 'Improving Outcomes in Haematological Cancers' as set out in the update decision.

Who the guideline is for

- Healthcare professionals in secondary care.
- Managed clinical networks.
- Commissioners of haematological cancer diagnostic and treatment services (including Clinical Commissioning Groups and NHS England Specialised Commissioning).

It may also be relevant for:

- Healthcare professionals in primary care.
- People using haematological cancer services, their family members and carers, and the public.

NICE guidelines cover health and care in England. Decisions on how they apply in other UK countries are made by ministers in the Welsh Government, Scottish Government, and Northern Ireland Executive.

Equality considerations

NICE has carried out an equality impact assessment [link in final version] during scoping. The assessment:

- lists equality issues identified, and how they have been addressed
- explains why any groups are excluded from the scope, if this was done.

1 What the guideline is about

1.1 Who is the focus?

Groups that will be covered

- All healthcare professionals that provide diagnostic and treatment services to the patient groups below, including clinical and scientific staff in secondary care.
- Adults (over 24 years), young people (16 to 24 years) and children (under 16 years) who are referred to secondary care with suspected haematological cancer.
- The staffing and facilities (levels of care) needed to treat haematological cancers in adults and young people.
- No specific subgroups of people have been identified as needing specific consideration.

Groups that will not be covered

- The staffing and facilities (levels of care) needed to treat haematological cancers in children (under 16 years).
- Adults, young people and children with monoclonal gammopathy of uncertain significance (MGUS) or monoclonal B-cell lymphocytosis.

In this guideline, haematological cancer also includes myeloproliferative neoplasms, aplastic anaemia/hypoplastic myelodysplastic syndrome and cutaneous lymphoma.

1.2 Settings

Settings that will be covered

- All secondary and tertiary care services that provide NHS care to people with suspected or diagnosed haematological cancers.

1.3 Activities, services or aspects of care

Key areas that will be covered

Areas from the published guideline that will be updated

1 Diagnosis and evaluation

2 Organisation of specialist services

Areas from the published guideline that will not be updated

1 Access to care

2 Patient-centred care

3 Continuing management

4 Palliative care

5 Clinical trials and use of protocols

Recommendations in areas that are not being updated may be edited to ensure that they meet current editorial standards, and reflect the current policy and practice context.

Areas from the published guideline that will be removed

1 Treatment (excluding high-dose therapy)

2 High-dose therapy

1.4 Economic aspects

We will take economic aspects into account when making recommendations. We will develop an economic plan that states for each review question (or key area in the scope) whether economic considerations are relevant, and if so whether this is an area that should be prioritised for economic modelling and analysis. We will review the economic evidence and carry out economic analyses, using an NHS and PSS perspective, as appropriate.

1.5 Key issues and questions

While writing this scope, we have identified the following key issues, and review questions related to them:

Key Issues

1 Providing a diagnostic service for diagnosing and managing haematological cancers for adults, young people and children:
   - Should centralised, integrated diagnostic reporting via Specialist Integrated Haematological Malignancy Diagnostic Services [SIHMDS] be the standard of care for diagnosing haematological cancers in all age groups?
   - What is the most effective way of providing an integrated diagnostic service (for example, co-located laboratory facilities that solely provide haematological cancer diagnosis or networked geographically seperate facilities that may also provide other services)?

2 The staffing and facilities (levels of care) needed to treat haematological cancers and support adults and young people who are having intensive non-transplant chemotherapy.
   - How should level of care be defined and categorised for people with haematological cancers who are having intensive non-transplant chemotherapy, considering:
     - ◊ diagnosis
     - ◊ comorbidities
     - ◊ medicine regimens
     - ◊ the management of medicine administration and toxicities?
   - What support facilities are needed at the different levels of care for people with haematological cancers who are having intensive non-transplant chemotherapy?

1.6 Main outcomes

The main outcomes that will be considered when searching for and assessing the evidence are:

1 Mortality
2 Treatment-related morbidity and mortality
3 Reliability, error rates and adverse events
4 Time to definitive diagnosis and treatment
5 Diagnostic accuracy

6 Patient and staff satisfaction

7 Health-related quality of life

8 Resource use and costs

2 Links with other NICE guidance

NICE guidance that will be updated by this guideline

Improving Outcomes in Haematological Cancers (2003) NICE cancer service guidance. Recommendations in sections 3 and 4.

NICE guidance about the experience of people using NHS services

NICE has produced the following guidance on the experience of people using the NHS. This guideline will not include additional recommendations on these topics unless there are specific issues related to haematological cancers:

- Patient experience in adult NHS services (2012) NICE guideline CG138
- Service user experience in adult mental health (2011) NICE guideline CG136
- Medicines adherence (2009) NICE guideline CG76
- Improving outcomes in children and young people with cancer (2005) NICE guideline CSGCYP

NICE guidance in development that is closely related to this guideline

NICE is currently developing the following guidance that is closely related to this guideline:

- Non-Hodgkin's lymphoma. NICE guideline. Publication expected July 2016.
- Myeloma. NICE guideline. Publication expected January 2016.
- Brentuximab vedotin for treating CD30-positive Hodgkin's lymphoma after autologous stem cell transplant NICE technology appraisal. Publication expected July 2016.
- Lenalidomide for the treatment of newly diagnosed multiple myeloma. NICE technology appraisal. Publication expected April 2016.
- Ibrutinib for treating relapsed or refractory mantle cell lymphoma. NICE technology appraisal. Publication expected February 2016.

- Bortezomib for previously untreated mantle cell lymphoma. NICE technology appraisal. Publication expected February 2016
- Panobinostat for treating multiple myeloma in people who have received at least 1 prior therapy. NICE technology appraisal. Publication expected January 2016.
- Idelalisib for relapsed chronic lymphocytic leukaemia. NICE technology appraisal. Publication expected October 2015.
- Ofatumumab for the maintenance treatment of relapsed chronic lymphocytic leukaemia. NICE technology appraisal. Publication expected September 2015.
- Suspected cancer. NICE guideline. Publication expected May 2015.
- Obinutuzumab in combination with chlorambucil for previously untreated chronic lymphocytic leukaemia. NICE technology appraisal. Publication expected May 2015.
- Ofatumumab in combination with chlorambucil or bendamustine for previously untreated chronic lymphocytic leukaemia. NICE technology appraisal. Publication expected May 2015.
- Bendamustine in combination with rituximab for the first-line treatment of mantle cell lymphoma. NICE technology appraisal. Publication date to be confirmed.
- Ibrutinib for treating relapsed or refractory chronic lymphocytic leukaemia and small lymphocytic leukaemia. NICE technology appraisal. Publication date to be confirmed.
- Bortezomib for the treatment of relapsed or refractory follicular non-Hodgkin's lymphoma. NICE technology appraisal. Publication date to be confirmed.
- Bendamustine in combination with rituximab for the first-line treatment of mantle cell lymphoma. NICE technology appraisal. Publication date to be confirmed.
- Bendamustine in combination with rituximab for the first-line treatment of indolent non-Hodgkin's lymphoma. NICE technology appraisal. Publication date to be confirmed.

- Pralatrexate for the treatment of relapsed or refractory peripheral T-cell lymphoma. NICE technology appraisal. Publication date to be confirmed.
- Lenalidomide as maintenance treatment of multiple myeloma after autologous stem cell transplantation. NICE technology appraisal. Publication date to be confirmed.
- Lenalidomide for the treatment of multiple myeloma in people who have received at least one prior therapy with bortezomib (partial review of TA171). NICE technology appraisal. Publication date to be confirmed.
- Vorinostat in combination with bortezomib for the treatment of multiple myeloma in people who have received at least one prior therapy. NICE technology appraisal. Publication date to be confirmed.
- Romidepsin for the treatment of relapsed or refractory peripheral T-cell lymphoma. NICE technology appraisal. Publication date to be confirmed.

2.1 NICE Pathways

When this guideline is published, the recommendations will be added to NICE Pathways. NICE Pathways bring together all related NICE guidance and associated products on a topic in an interactive topic-based flow chart.

The guideline will overlap with the NICE guidelines on myeloma and non-Hodgkin's lymphoma, which will be published in January and July 2016 respectively. The NICE Pathway will integrate the recommendations from all 3 guidelines, showing clearly how they fit together. Other relevant NICE guidance will also be added to the NICE Pathway, including:

- Neuropathic pain – pharmacological management (2013) NICE guideline CG173
- Acute kidney injury (2013) NICE guideline CG169
- Neutropenic sepsis (2012) NICE guideline CG151
- Opioids in palliative care (2012) NICE guideline CG140
- Anaemia management in people with chronic kidney disease (2011) NICE guideline CG114
- Coeliac disease (2009) NICE guideline CG86
- Metastatic spinal cord compression (2008) NICE guideline CG75

- Improving supportive and palliative care for adults with cancer (2004) NICE cancer service guidance
- Pomalidomide for relapsed and refractory multiple myeloma previously treated with lenalidomide and bortezomib (2015) NICE technology appraisal guidance 338
- Idelalisib for treating follicular lymphoma that is refractory to 2 prior treatments (terminated appraisal) (2014) NICE technology appraisal guidance 328
- Lenalidomide for treating myelodysplastic syndromes associated with an isolated deletion 5q cytogenetic abnormality (2014) NICE technology appraisal guidance 322
- Bortezomib for induction therapy in multiple myeloma before high-dose chemotherapy and autologous stem cell transplantation (2014) NICE technology appraisal guidance 311
- Pixantrone monotherapy for treating multiply relapsed or refractory aggressive non-Hodgkin's B-cell lymphoma (2014) NICE technology appraisal guidance 306
- Bosutinib for previously treated chronic myeloid leukaemia (2013) NICE technology appraisal guidance 299
- Decitabine for the treatment of acute myeloid leukaemia (terminated appraisal) (2012) NICE technology appraisal guidance 270
- Denosumab for the prevention of skeletal-related events in adults with bone metastases from solid tumours (2012). NICE technology appraisal guidance 265
- Dasatinib, nilotinib and standard-dose imatinib for the first-line treatment of chronic myeloid leukaemia (part review of technology appraisal guidance 70) (2012) NICE technology appraisal guidance 251
- Rituximab for the first-line treatment of stage III-IV follicular lymphoma (2012) NICE technology appraisal guidance 243
- Dasatinib, high-dose imatinib and nilotinib for the treatment of imatinib-resistant chronic myeloid leukaemia (CML) (part review of NICE technology appraisal guidance 70), and dasatinib and nilotinib for people with CML for

whom treatment with imatinib has failed because of intolerance (2012) NICE technology appraisal guidance 241

- Bortezomib and thalidomide for the first-line treatment of multiple myeloma (2011) NICE technology appraisal guidance 228
- Rituximab for the first-line maintenance treatment of follicular non-Hodgkin's lymphoma (2011) NICE technology appraisal guidance 226
- Azacitidine for the treatment of myelodysplastic syndromes, chronic myelomonocytic leukaemia and acute myeloid leukaemia (2011) NICE technology appraisal guidance 218
- Bendamustine for the first-line treatment of chronic lymphocytic leukaemia (2011) NICE technology appraisal guidance 216
- Temsirolimus for the treatment of relapsed or refractory mantle cell lymphoma (terminated appraisal) (2010) NICE technology appraisal guidance 207
- Bendamustine for the treatment of indolent (low grade) non-Hodgkin's lymphoma that is refractory to rituximab (2010) NICE technology appraisal guidance 206
- Ofatumumab for the treatment of chronic lymphocytic leukaemia refractory to fludarabine and alemtuzumab (2010) NICE technology appraisal guidance 202
- Rituximab for the treatment of relapsed or refractory chronic lymphocytic leukaemia (2010) NICE technology appraisal guidance 193
- Rituximab for the first-line treatment of chronic lymphocytic leukaemia (2009) NICE technology appraisal guidance 174
- Lenalidomide for the treatment of multiple myeloma in people who have received at least one prior therapy (2009) NICE technology appraisal guidance 171
- Epoetin alfa, epoetin beta and darbepoetin alfa for cancer treatment-induced anaemia (2008) NICE technology appraisal guidance 142
- Rituximab for the treatment of relapsed or refractory stage III or IV follicular non-Hodgkin's lymphoma: Review of technology appraisal guidance 37 (2008) NICE technology appraisal guidance 137

- Bortezomib monotherapy for relapsed multiple myeloma (2007) NICE technology appraisal guidance 129
- Fludarabine monotherapy for the first-line treatment of chronic lymphocytic leukaemia (2007) NICE technology appraisal guidance 119
- Guidance on the use of imatinib for chronic myeloid leukaemia (2013) NICE technology appraisal guidance 70
- Rituximab for aggressive non-Hodgkin's lymphoma (2003) NICE technology appraisal guidance 65
- Guidance on the use of fludarabine for B-cell chronic lymphocytic leukaemia (2011) NICE technology appraisal guidance 29
- Balloon kyphoplasty for vertebral compression fractures (2006) NICE interventional procedure guidance 166
- Laparo-endogastric surgery (2003) NICE interventional procedure guidance 25.
- Percutaneous vertebroplasty (2003) NICE interventional procedure guidance 12.

3 Context

3.1 Key facts and figures

Haematological malignancies are a diverse group of cancers that affect the blood, bone marrow, and lymphatic systems. Some forms are highly aggressive, and others are so benign that they are often only discovered by chance. Symptoms may include:

- lumps caused by enlarged lymph nodes, which are characteristic of lymphomas
- bone fractures and kidney problems, which are characteristic of myeloma
- fatigue and vulnerability to infection and bleeding, which can be caused by most types of haematological cancer but are particularly severe in acute leukaemia.

The main categories of haematological cancer are lymphoma, myeloma, leukaemia and myeloproliferative neoplasms. These categories vary in

prevalence, incidence and survival rates. In addition, there are subtypes of lymphoma and leukaemia, as well as rarer haematological cancers that have their own categories.

Haematological cancers accounted for 8.4% of all cancers (excluding non-melanoma skin cancer) diagnosed in England between 2001 and 2010 (National Cancer Intelligence Network). Based on data from the UK in 2011 (Cancer Research UK), there were approximately:

- 12,800 new cases of non-Hodgkin's lymphoma
- 8,600 new cases of leukaemia
- 4,800 new cases of myeloma
- 1,845 new cases of Hodgkin's lymphoma.

Non-Hodgkin's lymphoma is the sixth most common cancer in the UK and the most common type of haematological cancer, accounting for over 40% of all cases in both men and women (National Cancer Intelligence Network).

Myeloma is the seventeenth most common cancer in the UK and the second most commonly registered haematological cancer, accounting for 17% of all new haematological cancers annually (National Cancer Intelligence Network).

Hodgkin's lymphoma is an uncommon cancer in the UK and accounts for less than 1% of all cancer diagnoses.

Leukaemia accounts for 3% of all cancer diagnoses in the UK (Cancer Research UK). There are 4 main subtypes of leukaemia: acute myeloid leukaemia, acute lymphoblastic leukaemia, chronic lymphocytic leukaemia and chronic myeloid leukaemia. According to Cancer Research UK, in the UK in 2011:

- 3233 people were diagnosed with chronic lymphocytic leukaemia
- 2921 people were diagnosed with acute myeloid leukaemia
- 675 people were diagnosed with chronic myeloid leukaemia
- 654 people were diagnosed with acute lymphoblastic leukaemia.

In addition, there are other haematological cancers such as myeloproliferative neoplasms, and histiocytic and dendritic cell neoplasms. There are also borderline conditions such as hypoplastic myelodysplastic syndrome/aplastic anaemia and suspected cutaneous lymphomas that need specialised facilities for diagnosis and treatment.

The age-standardised incidence of haematological cancers in the UK has risen from 2001–2010 in both men and women. This is partly because of improved diagnosis, particularly from 2008 onwards. Conversely, age-standardised mortality rates have fallen over this period because of improvements in management (National Cancer Intelligence Network).

The 5-year relative survival rate was 67.7% for all haematological cancers as a whole (Haematological Malignancy Research Network).

Different levels of service are needed to manage haematological cancers, depending on the particular cancer in question.

The original 2003 guidance on improving outcomes in haematological cancers made recommendations on the structure of services. Since then there have been significant clinical, therapeutic and diagnostic developments, as well as a major reorganisation of the NHS in England. Cancer services have also learned from peer review and other NHS quality initiatives. Bodies such as the National Cancer Research Institute and National Cancer Survivorship Initiative have been created, and data collection through the National Cancer Intelligence Network has become routine. There have also been major developments in cancer services for teenagers and young adults, and in palliative care services. The FACT-JACIE accreditation system has become established for blood and marrow transplant services, and is now a policy requirement within the NHS England National Specialised Commissioning Clinical Reference Group for blood and marrow transplants. In addition, a number of relevant disease-specific guidelines and technology appraisals have been published or are in development by NICE.

The development of new diagnostic techniques has made it necessary to update the diagnostic and evaluation sections in the original guidance. In

addition, changes in the levels of care provided to people with haematological cancers mean an update to the section on organisation of specialist services is needed.

3.2 Current practice

Specialist Integrated Haematological Malignancy Diagnostic Services (SIHMDS) were recommended in the original NICE guidance on improving outcomes in haematological cancers, and were specified in the Cancer Peer Review Measures for England. Because of slow implementation, additional guidance was issued by the Department of Health in 2012. These recommendations have still not been implemented fully.

Levels of hospital care for people with haematological cancers were specified in the original NICE guidance. Because of the increased complexity of care, the British Committee for Standards in Haematology published new recommendations for levels of care in 2010.

There has been progressive and variable adoption of SIHMDS, aimed at improving diagnostic accuracy and expertise. Integrated diagnostic reports are well established in some centres but not everywhere. The models of SIHMDS provision vary, with 2 broad types:

- 'co-located' models, in which haematological cancer diagnosis is provided in dedicated, purpose-built and localised laboratories.
- 'networked' models, in which established laboratories work on the same information network, but are geographically separate and not dedicated solely to haematological cancer diagnosis[1].

Both approaches offer potential advantages and disadvantages. Networked SIHMDS models use the experience of established laboratories, and also potentially avoid the capital, staffing and other developmental costs needed for a co-located service. However, individual laboratories may deliver other

[1] Dalley C, Basarir H, Wright JG, et al. (2015) Specialist integrated haematological malignancy diagnostic services: an Activity Based Cost (ABC) analysis of a networked laboratory service model. Journal of Clinical Pathology. Published online

services outside of haematological diagnosis, and so may be less focussed on haemato-oncology[2].

Although there are common areas in the diagnosis of both adult and paediatric haematological cancers, there has been no directive for integrated diagnostics for children under 16 years, for whom considerations of accuracy, central review and integration are similar.

Although FACT-JACIE is now well established for high-dose therapy and blood and marrow transplants, the provision of non-transplant intensive chemotherapy needs to be reviewed. In this guideline the definition of 'intensive chemotherapy' will be based on the anticipated level of neutropenia being less than or equal to 0.5 $x10^9$/litre for more than 7 days, in addition to other potential organ toxicities. This update will therefore only consider a limited number of intensive chemotherapy regimens for acute myeloid leukaemia and other myeloid cancers, acute lymphoblastic leukaemia, diffuse large-cell non-Hodgkin's lymphoma and Hodgkin's lymphoma. As in the original guidance, service delivery has a focus on inpatient facilities, but this update will also include ambulatory care.

3.3 Policy, legislation, regulation and commissioning

Policy

Department of Health (2013) Helping more people survive cancer

Department of Health (2012) Commissioning cancer services

Department of Health (2011) The National cancer strategy

Legislation, regulation and guidance

The following guidance from professional bodies will be taken into account when developing this guideline:

[2] Dalley C, Basarir H, Wright JG, et al. (2015) Specialist integrated haematological malignancy diagnostic services: an Activity Based Cost (ABC) analysis of a networked laboratory service model. Journal of Clinical Pathology. Published online

British Committee for Standards in Haematology (2010) Facilities for the Treatment of Adults with Haematological Malignancies – 'Levels of Care'

Joint Accreditation Committee ISCT-EBMT (2015) International standards for cellular therapy product collection, processing and administration

World Health Organization (2008) Classification of Tumours of Haematopoietic and Lymphoid Tissues 4th Edition

Commissioning

Commissioning of cancer diagnostic services falls within the remit of the Clinical Commissioning Groups in England. Treatment of haematological cancers is commissioned by NHS England Specialised Commissioning.

4 Further information

This is the draft scope for consultation with registered stakeholders. The consultation dates are 14 April to 30 April 2015.

The guideline is expected to be published in May 2016.

You can follow progress of the guideline.

Our website has information about how NICE guidelines are developed.