NICE National Institute for Health and Care Excellence

NICE Pathways

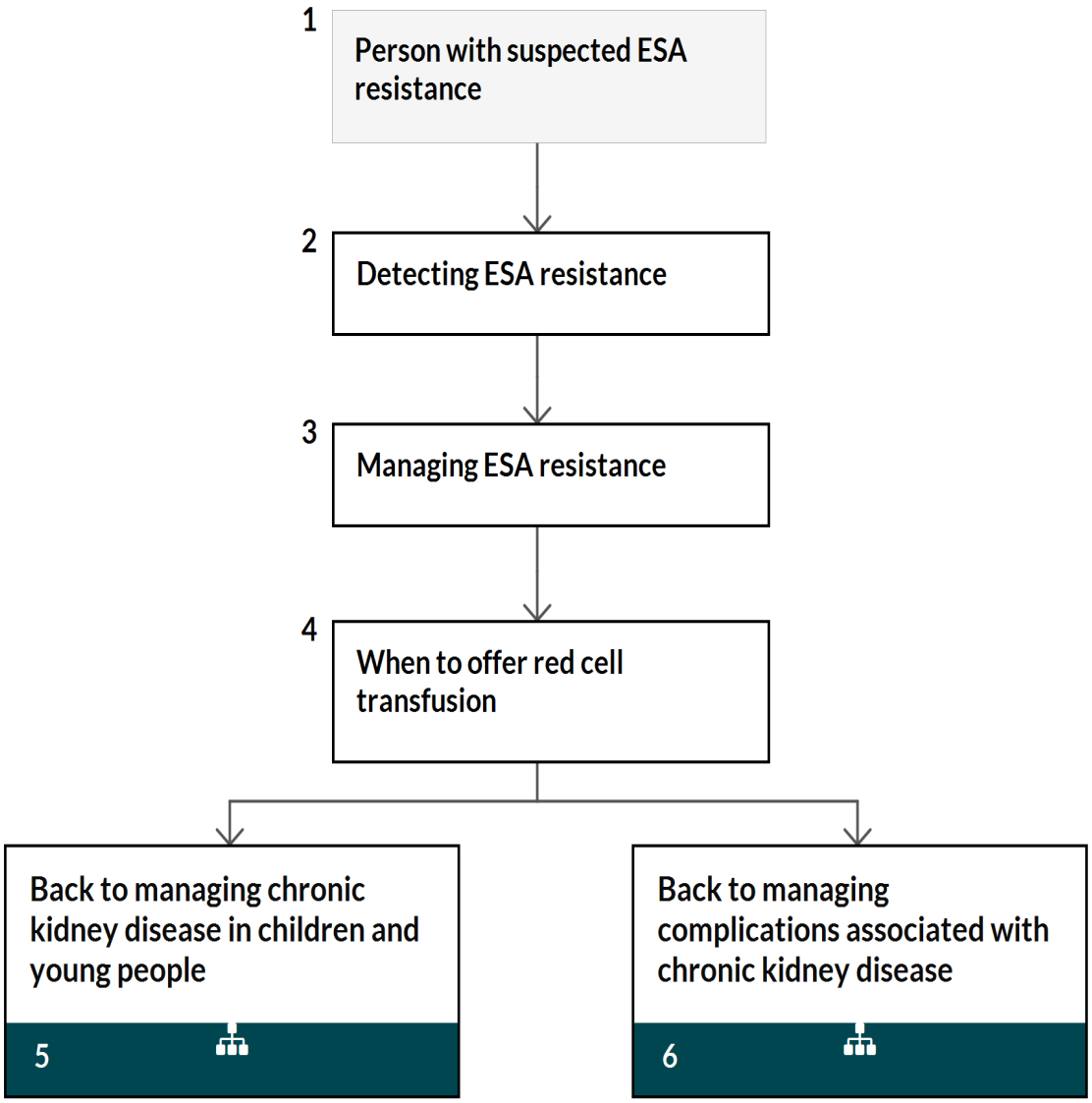
Detecting and managing ESA resistance

NICE Pathways bring together everything NICE says on a topic in an interactive flowchart. NICE Pathways are interactive and designed to be used online.

They are updated regularly as new NICE guidance is published. To view the latest version of this NICE Pathway see:

http://pathways.nice.org.uk/pathways/chronic-kidney-disease
NICE Pathway last updated: 27 October 2021

This document contains a single flowchart and uses numbering to link the boxes to the associated recommendations.



1 Person with suspected ESA resistance

No additional information

2 Detecting ESA resistance

After other causes of anaemia, such as intercurrent illness or chronic blood loss have been excluded, regard people with anaemia of CKD as resistant to ESAs when:

- an aspirational Hb range is not achieved despite treatment with 300 IU/kg/week or more of subcutaneous epoetin or 450 IU/kg/week or more of intravenous epoetin or 1.5 micrograms/kg/week of darbepoetin **or**
- there is a continued need for the administration of high doses of ESAs to maintain the aspirational Hb range.

In people with CKD, PRCA is indicated by a low reticulocyte count, together with anaemia and the presence of neutralising antibodies. Confirm PRCA by the presence of anti-erythropoietin antibodies together with a lack of pro-erythroid progenitor cells in the bone marrow.

In people with anaemia of CKD, aluminium toxicity should be considered as a potential cause of a reduced response to ESAs after other causes, such as intercurrent illness and chronic blood loss, have been excluded.

3 Managing ESA resistance

Consider specialist referral for ESA-induced PRCA.

If aluminium toxicity is suspected in an adult, child or young person with anaemia of CKD having haemodialysis, perform a desferrioxamine test and review the management of their condition accordingly.

4 When to offer red cell transfusion

Consider referring adults, children and young people with ESA resistance to a haematology service, particularly if an underlying haematological disorder is suspected.

Evaluate and discuss the risks and benefits of red cell transfusion with the person or, if

appropriate, with their family or carers.

Take into account the person's symptoms, quality of life, underlying conditions and the chance of a future successful kidney transplant, in addition to Hb levels, when thinking about the need for red cell transfusion.

Review the rate of red cell transfusion and consider a trial period of stopping ESA in people who have ESA resistance (typically on haemodialysis and on high-dose ESA) and are having frequent transfusions when:

- all reversible causes of ESA resistance have been taken into account and excluded **and**
- the person's condition is otherwise stable (without intercurrent illness such as infection) **and**
- the person is receiving adequate dialysis.

Review the rate of red cell transfusion between 1 and 3 months after stopping ESA therapy. If the rate of transfusion has increased, consider restarting ESA therapy.

See starting ESA therapy.

5 Back to managing chronic kidney disease in children and young people

See Chronic kidney disease / Managing chronic kidney disease in children and young people

6 Back to managing complications associated with chronic kidney disease

See Chronic kidney disease / Managing complications associated with chronic kidney disease in adults

Glossary

CKD

(chronic kidney disease: defined as abnormalities of kidney function or structure present for more than 3 months, with implications for health; this includes all people with markers of kidney damage and those with a glomerular filtration rate of less than 60 ml/min/1.73 m^2 on at least 2 occasions separated by a period of at least 90 days [with or without markers of kidney damage])

ESA

erythropoiesis-stimulating agent

ESAs

erythropoiesis-stimulating agents

Hb

haemoglobin

PRCA

pure red cell aplasia

Sources

Chronic kidney disease (2021) NICE guideline NG203

Your responsibility

Guidelines

The recommendations in this guideline represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not

mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

Local commissioners and providers of healthcare have a responsibility to enable the guideline to be applied when individual professionals and people using services wish to use it. They should do so in the context of local and national priorities for funding and developing services, and in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities. Nothing in this guideline should be interpreted in a way that would be inconsistent with complying with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Technology appraisals

The recommendations in this interactive flowchart represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, health professionals are expected to take these recommendations fully into account, alongside the individual needs, preferences and values of their patients. The application of the recommendations in this interactive flowchart is at the discretion of health professionals and their individual patients and do not override the responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or their carer or guardian.

Commissioners and/or providers have a responsibility to provide the funding required to enable the recommendations to be applied when individual health professionals and their patients wish to use it, in accordance with the NHS Constitution. They should do so in light of their duties to have due regard to the need to eliminate unlawful discrimination, to advance equality of opportunity and to reduce health inequalities.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.

Medical technologies guidance, diagnostics guidance and interventional procedures guidance

The recommendations in this interactive flowchart represent the view of NICE, arrived at after careful consideration of the evidence available. When exercising their judgement, healthcare professionals are expected to take these recommendations fully into account. However, the interactive flowchart does not override the individual responsibility of healthcare professionals to make decisions appropriate to the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

Commissioners and/or providers have a responsibility to implement the recommendations, in their local context, in light of their duties to have due regard to the need to eliminate unlawful discrimination, advance equality of opportunity, and foster good relations. Nothing in this interactive flowchart should be interpreted in a way that would be inconsistent with compliance with those duties.

Commissioners and providers have a responsibility to promote an environmentally sustainable health and care system and should assess and reduce the environmental impact of implementing NICE recommendations wherever possible.