

## Anaemia: Identification and management in chronic kidney disease

### Summary

- The current haemoglobin (Hb) range will now be set at **10 to 12 g/dL** (1, 2). Anaemia is a known risk factor for the development of cardiovascular co-morbidities in CKD patients as well as a reduction in quality of life (3, 4).
- All possible causes for anaemia should be identified prior to commencing any ESA therapy (1, 3).
- The lowest dose ESA will be used for each patient to achieve recommended Hb targets, improve quality of life and prevent the need for blood transfusions (5, 6).
- Correction and maintenance of functional iron stores to optimal levels will be an effective treatment for CKD patients with low Hb levels prior to and during ESA therapy (1, 3, 4).
- Haemoglobin, iron stores and ESA dosing for patients with CKD will be maintained at optimal levels to provide for an improved quality of life and a decrease in adverse symptoms (3, 4).
- Nursing staff will check monthly blood results and monitor patients for adverse signs and symptoms, organizing a review of ESA dosing and iron requirements with the Nephrologist as necessary to provide for optimal patient outcomes (4).
- Aiming for a Hb target of > 130 g/dL can lead to negative outcomes for all patients with CKD, such as hypertension, MI, stroke and vascular access blockages (1, 3, 7, 8).

### CARI GUIDELINES: (2006)

- The targeting of haemoglobin concentrations above 130 g/L has been associated with an increased mortality in chronic kidney disease (CKD) patients (dialysis and pre-dialysis) and is therefore currently considered inadvisable. (Level I evidence)
- Achieve and maintain haemoglobin above 110 g/L (Level III and IV)
- Maintain serum ferritin 200 – 500 ug/L and Tsats 30 – 40% during ESA therapy
- Monitor iron levels 3 monthly for patients on ESA who have attained target Hb
- Monitor iron levels monthly on commencement and during periods of increased ESA dosing
- Delay monitoring for at least 2 weeks after iron dosing of > 200 mg
- The haemoglobin concentration should be checked at least every 2 months and iron stores at least every 3 months. Vitamin B12 and folate levels should be checked at least every 12 months. (Opinion)
- IV iron may be needed at initiation of ESA

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- If serum ferritin is > 500 µg/L (or TSAT > 40%), withhold IV iron for up to 3 months. When serum ferritin declines to < 500 µg/L (or TSAT < 40%), IV iron can be resumed at a reduced dose/frequency
- <http://www.cari.org.au>

### WHAT OTHER GUIDELINES SAY:

#### KDOQI CLINICAL PRACTICE GUIDELINES:

- All other potential causes for low Hb levels other than EPO deficiency should be identified or excluded
- 2.1.2 In the opinion of the Work Group, in dialysis and nondialysis patients with CKD receiving ESA therapy, the selected Hb target should generally be in the range of 11.0 to 12.0 g/dL. (Clinical Practice RECOMMENDATION)
- 2.1.3 In dialysis and nondialysis patients with CKD receiving ESA therapy, the Hb target should not be greater than 13.0 g/dL. (Clinical Practice GUIDELINE - MODERATELY STRONG EVIDENCE)
- <http://www.kidney.org/kidneyDisease>

#### KDIGO announces Anaemia Guideline update:

- "An updated anaemia guideline is considered necessary in light of new study results, particularly the data from "Trial to Reduce Cardiovascular Events with Aranesp Therapy" (TREAT) which was made public in November. The process will be accelerated to publish the guideline in a year rather than two years to ensure that practitioners and patients benefit from new knowledge as soon as possible," said Kai-Uwe Eckardt, MD, Head of Nephrology and Hypertension at the University of Erlangen-Nuremberg in Germany and Co-Chair of KDIGO
- <http://www.kdigo.org>

#### EUROPEAN RENAL BEST PRACTICE GUIDELINES: (10,17)

- **Haemoglobin target:** In 2004, EBPG suggested an Hb target of ≥11 g/dl; values of >14 g/dl were considered undesirable in general, and the limit for patients with cardiovascular disease was set at 12 g/dl.
- **Targets for iron therapy:** Traditionally, the most widely used iron tests are serum ferritin and transferrin saturation (TSAT) levels. In 2004, EBPG recommended lower limits of ferritin and TSAT of, respectively, 100 ng/ml and 20%, with target ranges of respectively 200–500 ng/ml and 30–50%.
- If serum ferritin levels are > 500 ng/mL, iron administration should be discouraged.
- <http://ndt.oxfordjournals.org/cgi/reprint/24/2/348>

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### UK RENAL ASSOCIATION: (1)

- Patients with CKD should achieve an outcome distribution of haemoglobin of 10.5 – 12.5 g/dl
- Adjustments to ESA doses should be considered when Hb is < 11 or > 12 g/dl in order that the population distribution has the maximum proportion of patients in the range 10.5 – 12.5 as is possible

### CANADIAN SOCIETY OF NEPHROLOGY (CSN) 1999 (1)

- The target haemoglobin during epoetin therapy is advised to be between 110 and 120 g/L for both men and women
- It is suggested that epoetin be used before and after initiation of dialysis

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