

Anaemia – haemoglobin target in HD and PD patients

EBPG Europe	ERBP Europe	KDIGO global	KDOQI US	Renal Association UK	Dialysis standards Germany
<p>>11 g/dl (Guideline)</p> <p>- in HD patients pre-dialysis Hb >14 g/dl not desirable due to the risks associated with effects arising from post-dialysis haemoconcentration (Evidence level C)</p> <p>- cave Hb >12 g/dl in diabetic patients (evidence level C) and in patients with severe CVD (Evidence level A)</p> <p>- a higher Hb may be beneficial for patients with chronic hypoxaemic pulmonary disease (Evidence level C)</p>	<p>11 – 12 g/dl, not >13 g/dl intentionally</p> <p>- if a patient can obtain a Hb of 11.5 g/dL on no/low doses of ESA therapy, there is less cause for concern than with a patient requiring very high doses of ESA therapy to achieve this Hb.</p> <p>- in patients with type 2 diabetes not undergoing dialysis (and probably in diabetics at all CKD stages), more caution is needed when treating anaemia with ESA therapy. In diabetic patients with a history of stroke, a lower target is more sensible (10–12 g/dL), balancing the risk–benefit of treatment and the desired Hb target in the individual patient. (position statement)</p>	<p>- levels of >13 g/dl can be associated with harm</p> <p>- levels of 9.5–11.5 g/dl are associated with better outcomes compared with >13 g/dl</p> <p>- for levels between 11.5 and 13 g/dl, there is no evidence at this time for harm or benefit compared with higher or lower levels (position statement)</p>	<p>11.0 - 12.0 g/dL (Clinical Practice Recommendation)</p> <p>not be greater than 13.0 g/dL (Clinical Practice Guideline - moderately strong evidence)</p>	<p>10.5 - 12.5 g/dl (Clinical Practice Guideline - Evidence)</p>	<p>minimum 10 g/dl</p> <p>- a Hb of 11 to 13 g/dl should be targeted</p>

<http://www.era-edta.org/>; Nephrol Dial Transplant (2004) 19 [Suppl 2]: ii6-ii15

<http://www.era-edta.org/>; Nephrol Dial Transplant (2010) 25(9):2846-50

<http://www.kdigo.org/publications.php>; Kidney Int (2008) 74: 1237-1240

www.kidney.org/professionals/kdqi/guidelines.cfm;
Am J Kidney Dis (2007) 50 (3): 479-512

<http://www.renal.org/pages/pages/clinical-affairs/guidelines.php>

www.nephrologie.de/Dialysestandards2006.pdf; Nieren- und Hochdruckkrankheiten (2007) 36 (5): 163-203

Editor’s note: FDA News Release June 24, 2011: FDA modifies dosing recommendations for Erythropoiesis-Stimulating Agents:

- “Using ESAs to target a Hb level of >11 g/dL increases the risk of serious adverse cardiovascular events and has not been shown to provide additional patient benefit.
- The lowest ESA dose sufficient to reduce the need for red blood cell transfusions should be used.
- Patients on dialysis: Initiate ESA treatment when the Hb level is less than 10 g/dL and if the Hb level approaches or exceeds 11 g/dL, reduce or interrupt the dose of ESA.”

Mineral and bone disorder in HD and PD patients

EBPG Europe	KDIGO global	KDOQI US	Renal Association UK	Dialysis standards Germany
<p>phosphorus 2.5 - 5.5 mg/dl (0.8 - 1.8 mmol/l) in HD <i>(Guideline - Evidence level B)</i></p> <p>- for PD patients no guidelines</p>	<p>lowering elevated phosphorus levels toward the normal range <i>(Recommendation)</i></p>	<p>phosphorus 3.5 - 5.5 mg/dl (1.13 and 1.78 mmol/l) <i>(Guideline - Evidence)</i></p>	<p>phosphate 3.4 – 5.5 mg/dl (1.1 and 1.8 mmol/l) - in HD measured before a ,short gap' dialysis session <i>(Clinical Practice Guideline - Evidence)</i></p>	<p>phosphate 3.5 – 5.5 mg/dl (1.13 – 1.78 mmol/l)</p>
-	<p>maintaining serum calcium in the normal range <i>(Recommendation)</i> - using a dialysate calcium concentration between 1.25 mmol/l and 1.50 mmol/l</p>	<p>corrected total calcium 8.4 - 9.5 mg/dl (2.10 - 2.37 mmol/l) <i>(Guideline - Opinion)</i></p>	<p>albumin corrected calcium within normal range - ideally 8.8 - 10 mg/dl (2.2 - 2.5 mmol/l) - in HD measured before a ,short gap' dialysis session <i>(Clinical Practice Guideline - Good Practice)</i></p>	<p>albumin or total protein corrected calcium within normal range, preferentially in the lower half of normal range</p>

www.era-edta.org/guidelines.htm;
Nephrol Dial Transplant
(2002) 17 [Suppl 7]: 95-96

www.kdigo.org/clinical_practice_guidelines/kdigo_guideline_for_ckd-mbd.php; Kidney Int (2009) 76 [Suppl 113]: S50-S99

www.kidney.org/professionals/kdqi/guidelines.cfm; Am J Kidney Dis (2003) 42 (4) [Suppl 3]

www.renal.org/guidelines/index.html,
<http://www.renal.org/guidelines/module2.html>

www.nephrologie.de/Dialysstandar2006.pdf; Nieren- und Hochdruckkrankheiten (2007) 36 (5): 163-203

Mineral and bone disorder in HD and PD patients

EBPG Europe	KDIGO global	KDOQI US	Renal Association UK	Dialysis standards Germany
<p>Ca x P <55 mg²/dl² in HD (Guideline - Evidence level B)</p> <p>- for PD patients no guidelines</p>	-	<p>Ca x P <55 mg²/dl² (Guideline - Evidence)</p>	<p>albumin corrected Ca x P <60 mg²/dl² (4.8 mmol²/L²) - ideally <52.5 mg²/dl² (<4.2 mmol²/L²) (Clinical Practice Guideline - Evidence)</p>	-
-	<p>maintaining iPTH levels in the range of approximately 2 to 9 times the upper limit for the assay</p>	<p>iPTH 150 - 300 pg/ml (16.5 - 33.0 pmol/l) (Guideline - Evidence)</p>	<p>iPTH 2 - 4 times the upper limit of normal for the iPTH assay used (Clinical Practice Guideline – Good Practice)</p>	<p>iPTH 2 - 5 times above normal range</p>

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www.kdigo.org/clinical_practice_guidelines/kdigo_guideline_for_ckd-mbd.php; Kidney Int
(2009) 76 [Suppl 113]: S50-S99

www.kidney.org/professionals/kdoqi/guidelines.cfm; Am J
Kidney Dis (2003) 42 (4)
[Suppl 3]

www.renal.org/guidelines/index.html;
<http://www.renal.org/guidelines/module2.html>

www.nephrologie.de/Dialysestandar2006.pdf; Nieren-
und Hochdruckkrankheiten
(2007) 36 (5): 163-203

Adequacy / Kt/V urea in HD patients

EBPG Europe	KDOQI US	Renal Association UK	Dialysis standards Germany
<p>eKt/V ≥ 1.2 in anuric HD patients <i>(Guideline - Evidence level III)</i></p> <p>- higher doses, up to 1.4 should be considered in females and those patients with high comorbidity <i>(Evidence level IV)</i></p>	<p>spKt/V ≥ 1.2 (excluding residual kidney function) <i>(Clinical Practice Guideline – Grade A)</i></p>	<p>spKt/V of > 1.3 or eKt/V of > 1.2 <i>(Clinical Practice Guideline - Evidence)</i></p>	<p>spKt/V ≥ 1.2</p>
<p>www.era-edta.org/guidelines.htm; Nephrol Dial Transplant (2007) 22 [Suppl 2]: ii5-ii21</p>	<p>www.kidney.org/professionals/kdoqi/guidelines.cfm; Am J Kidney Dis (2006) 48 (1) [Suppl 1]: S28-S32</p>	<p>www.renal.org/guidelines/index.html</p>	<p>www.nephrologie.de/Dialysestandard2006.pdf; Nieren- und Hochdruckkrankheiten (2007) 36 (5): 163-203</p>

Adequacy / Kt/V urea in PD patients

EBPG Europe	KDOQI US	ISPD International Society of PD	Renal Association UK	Dialysis standards Germany
<p>Kt/V ≥ 1.7 in anuric PD patients (<i>Guideline - Evidence level A</i>)</p>	<p>Kt/V ≥ 1.7 (total, peritoneal and kidney Kt/V) (<i>Clinical Practice Guideline - Grade B</i>)</p>	<p>Kt/V ≥ 1.7 total (renal and peritoneal); Kt/V should not be less than 1.7 at any time, i.e. in anuric patients peritoneal Kt/V has to be above 1.7 (<i>Guideline – Evidence level A</i>)</p>	<p>Kt/V of ≥ 1.7 total (peritoneal and kidney Kt/V) (<i>Clinical Practice Guideline - Evidence</i>)</p>	<p>Kt/V ≥ 1.9</p>
<p>www.era-edta.org/guidelines.htm; Nephrol Dial Transplant (2005) 20 [Suppl 9]: ii24-ii27</p>	<p>www.kidney.org/professionals/kdoqi/guidelines.cfm; Am J Kidney Dis (2006) 48 (1) [Suppl 1]: S103-S116</p>	<p>www.ispd.org/lang-en/treatmentguidelines/guidelines; Perit Dial Int (2006) 26 (5): 520-522</p>	<p>www.renal.org/guidelines/index.html</p>	<p>www.nephrologie.de/Dialysestandar2006.pdf; Nieren- und Hochdruckkrankheiten (2007) 36 (5): 163-203</p>