

Management of malnutrition in patients receiving haemodialysis

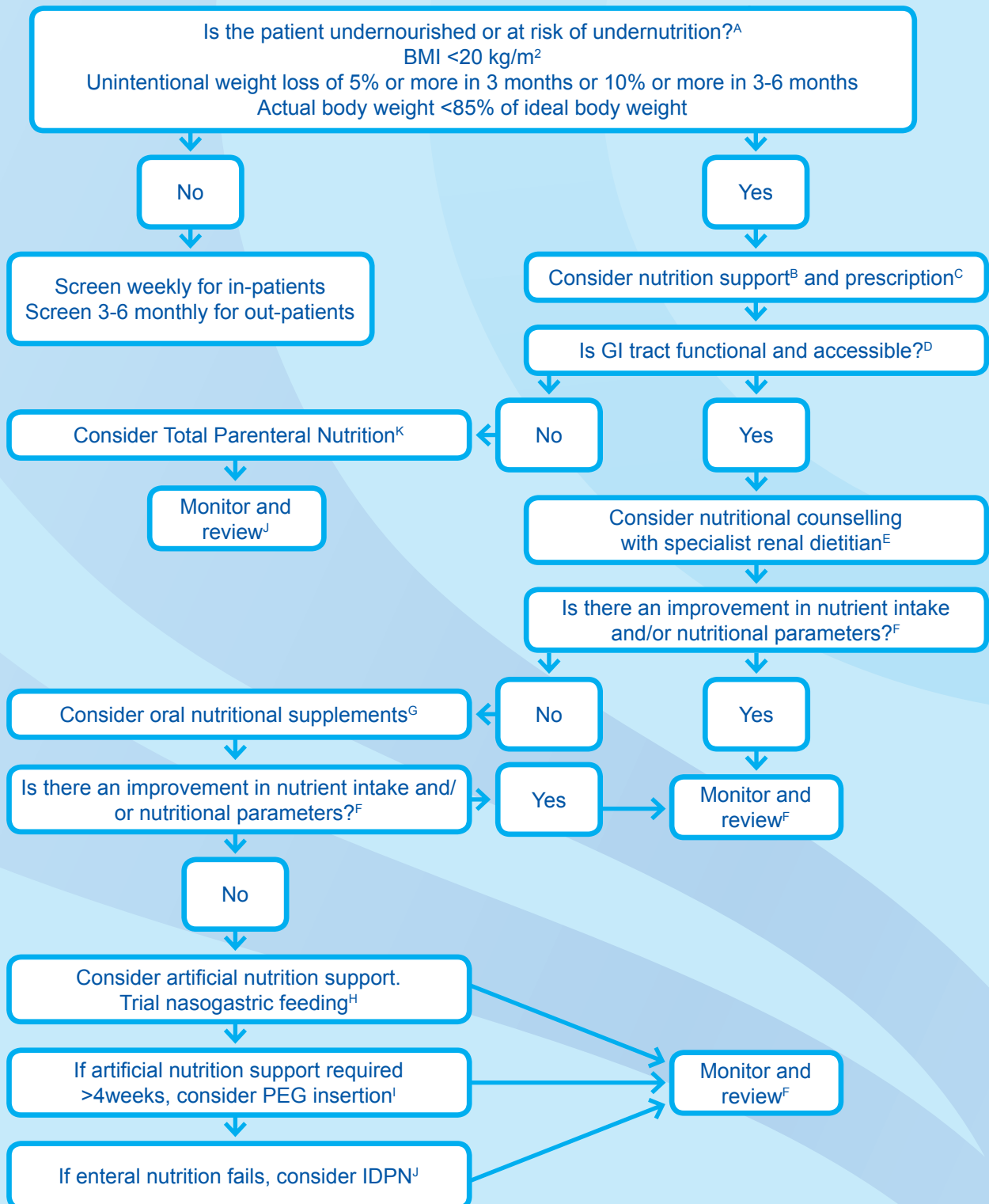
Decision Tree



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Links to Decision tree for the management of malnutrition in haemodialysis (HD) patients

A. Nutrition screening

All patients with chronic kidney disease stage 5 should be screened for malnutrition risk on admission¹, at their first clinic appointment¹ and/or at the start of HD³. Screening should use body mass index and % unintentional weight loss^{1,2}. The use of other nutritional markers such as % ideal body weight (IBW), subjective global assessment score and anthropometry should also be considered^{2,3}. This should be repeated weekly for in-patients and 3-6 monthly for stable patients^{2,3}.

For patients on dialysis, dry weight (post dialysis weight) should be used.

B. Consideration of nutrition support

Nutrition support should be considered in undernourished HD patients as defined by low nutritional indices including BMI <20 kg/m²^{2,4}, weight loss >10% over 6 months^{1,2,4} and albumin <35g/l⁴ as well as those with intercurrent catabolic acute conditions in whom normal nutrition is not possible and in whom adequate oral intake cannot be achieved⁴. Be aware that provision of nutrition support is not always appropriate. Decisions on withholding nutrition support require consideration of both ethical and legal principles¹. All decisions on treatment and care including all forms of nutrition support should take into account patients' needs and preferences and patients should have the opportunity to make informed decisions about their care and treatment, in partnership with their health professionals¹.

C. Nutrition prescription

The provision of artificial nutrition support should meet the patient's prescribed energy and protein requirements. Guidelines vary on the recommended energy requirements of HD patients but on the whole recommend between 30-40 kJ/kg IBW/d^{2,3,4} in clinically stable patients depending on age and level of physical activity. Recommendations for protein requirements also vary at 1.1g/kg IBW/d^{3,5}, 1.2 g/kg IBW/d² and 1.2-1.4g/kg/d⁴. Despite KDOQI guidelines recommending that 50% of protein requirements should be provided by high biological value protein sources⁶, a more recent systematic review found insufficient evidence to make any recommendations on specific amounts of high or low biological value protein⁵. It is recognised that higher protein intakes of 1.4g/kg/d may not improve survival and may actually be harmful⁵.

Minerals such as sodium, potassium, calcium and phosphate are usually checked monthly in all dialysis patients. Supplementation of these minerals is not usually required and most patients will require dietary restrictions of sodium (80-100 mmols/day), potassium (50-70 mmols/day) and phosphate (800-1000 mg/day)³.

The use of daily water soluble vitamin supplementation is recommended due to dialysis losses^{2,3,4}.

Routine haemodialysis does not usually induce significant trace element losses but in depleted patients, zinc (15mg/d) and selenium (50-75 µg/day) supplementation may be useful⁴.

When considering the nutritional prescription in people requiring enteral tube feeding or parenteral nutrition, individuals at high risk of refeeding syndrome should be recognised¹. Feeding should be introduced cautiously and the prescription altered accordingly¹.

D. Type of nutrition support

Enteral feeding should be considered in patients identified as being malnourished or at risk of malnutrition. Parenteral feeding is indicated in HD patients when the gastrointestinal tract cannot be used for enteral feeding or when enteral feeding is insufficient to reach nutrient intake goal⁷.

E. Dietary counselling

Malnourished HD patients should receive dietary counselling to discuss how to increase the calorie and protein content of their diets³. This should be started within 3 days of referral for hospitalised patients³. All haemodialysis patients should have access to a qualified dietitian³. However in cases where the patient has been admitted to hospital and there is not a specialist renal dietitian available, it may be possible to seek specialist advice from the patient's dialysis unit dietitian if needed.

F. Monitoring of nutrition support

A variety of nutritional assessment methods should be used to monitor tolerance and efficacy of nutrition support provided¹. Stable MHD patients should be interviewed every 3 or 6 months according to age (<50 years, every 6 months, >50 years every 3 months), and dialysis vintage (<5 years, every 6 months, >5 years every 3 months) as indicated to improve dietary compliance whilst also recommending nutrition support as and when needed³. For in-patients, a daily review is recommended for high risk patients and weekly for lower risk³.

G. Oral Nutritional Supplements (ONS)

ONS should be prescribed if oral intake is below minimum recommendations and food intake cannot be improved^{2,3} and/or to improve nutritional status⁴. Products specifically formulated for dialysis patients, which take into account fluid and electrolytes, should be prescribed in preference to standard supplements for non-renal patients³.

H. Nasogastric feeding (NG)

The use of NG feeding is recommended if intake is insufficient despite the use of ONS^{2,3,4}. A trial of NG feeding for a period of 4 weeks should be considered before decisions of a longer term feeding option are made. Disease specific formula for dialysis patients are preferred^{3,4}.

I. Percutaneous endoscopic gastrostomy (PEG) feeding

If patients require feeding for a long period and have had a trial of NG feeding for 4 weeks, a PEG should be considered. Decisions around inserting a PEG should involve all members of the multi-disciplinary team and the patient and/or carer. Disease specific formula for dialysis patients are preferred^{3,4}.

J. Intradialytic Parenteral Nutrition (IDPN)

When intensive dietary counselling, ONS and enteral feeding have failed, a course of IDPN is recommended^{2,3,7}. IDPN should only be considered in malnourished patients who have a spontaneous nutrient intake of >20 kcal/kg IBW and 0.8 g protein/kg IBW/day. Otherwise, parenteral nutrition infused over the entire day is indicated.

K. Parenteral nutrition (PN)

PN is indicated in HD patients when the gastrointestinal tract cannot be used for enteral feeding or when enteral nutrition is insufficient to reach nutrient intake goal.

References

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