NestléHealthScience

Fact Sheet
Chronic kidney disease, hyperphosphataemia and its management

Chronic kidney disease	• Chronic kidney disease (CKD) is a long-term health condition in which the kidneys do not work properly. At first there are no symptoms, but when the disease is advanced people can feel tired, nauseous and can get swollen feet, ankles or hands. • CKD is quite common. For example, it affects approximately 11-15% of the US population. • CKD is more common amongst older people, with around a fifth or more of older people aged between 65 and 74 being affected. • People with CKD have an increased risk of stroke or heart attack, as well as kidney failure. When the kidneys fail all together patients may be treated by dialysis (an artificial kidney machine), or kidney transplant.
Hyperphosphateemia	• The later stages of kidney disease are associated with a loss of phosphate regulation by the body. This is because the kidneys normally regulate phosphate excretion. • CKD is also associated with alterations in bone remodelling, including an increase in bone resorption (bone loss). This means that the phosphate that is normally stored in bone is released into the bloodstream. • The loss of control of phosphate excretion, coupled with an increase in phosphate from the skeleton, results in hyperphosphataemia (high blood phosphate). • Hyperphosphataemia is implicated in vascular calcification, which is causally related to cardiovascular morbidity, as well as osteoporosis (thinning of the bones).
Management of hyperphosphataemia	• As a first step in the management of hyperphosphataemia, patients are advised to reduce the amount of phosphate in their diet. • However, dietary reduction is usually not effective enough by itself, and so most patients are given an oral phosphate binder. This is a medicine that binds to the phosphate in the food that is in the gut. It works by preventing phosphate from being absorbed from the gut into the bloodstream. • Oral phosphate binders are generally well tolerated, but there may be some side effects of using phosphate binders, including nausea, constipation or diarrhea, flatulence (wind) as well as skin problems (itchy skin or skin rash).
Fostrap™	• Fostrap™ is a medical food under development by CM&D. It is in the form of a chewing gum that binds phosphate from saliva. This is is a novel target for managing hyperphosphataemia. • Patients with advanced CKD often have an increased amount of phosphate in their saliva, which when swallowed adds to the overall phosphate load of the gut. From there it can be absorbed and contribute to the increased phosphate level in the blood. • Fostrap™ is being developed as a complementary approach to current medical therapy. • Clinical trials are still on-going, but preliminary data published to date are promising.
For more information	• CKD information for patients http://www.kidneyresearchuk.org/__assets/asset287.pdf • Hruska KA, Mathew S, Lund R, Qiu P, Pratt R (2008) Hyperphosphatemia of chronic kidney disease. Kidney Int. 2008 Jul;74(2):148-57. Epub Apr 30.http://www.ncbi.nlm.nih.gov/pubmed/18449174 • Marcello Tonelli, M.D., Neesh Pannu, M.D., and Braden Manns, M.D.(2010) Oral Phosphate Binders in Patients with Kidney Failure N Engl J Med 2010; 362:1312-1324 April 8 http://www.nejm.org/doi/full/10.1056/NEJMra0912522 • Fostrap™ http://www.asn-online.org/press/pdf/2009-media/Calo_Hyperphosphatemia_Study.pdf