Apply to become a member of our working group !

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Research Project of the ESPN CKD-MBD Working Group supported by the ESPN:

Vitamin D supplementation and hyperphosphatemia control in children with CKD

ESPN 2014.3

Background: Children with chronic kidney disease (CKD) are prone to develop alterations of mineral and bone metabolism resulting in long-term sequel, i.e. growth failure, bone deformities, and ectopic calcifications (CKD-MBD). Both, vitamin D deficiency and high phosphate load are important contributers to CKD-MBD.

Objectives: This working group has the aim to i) provide education and training for the management of CKD-MBD in children, to ii) perform clinical studies on this topic, and to iii) develop appropriate guidelines.

Research project supported by the ESPN: With this research grant we will perform *two* observational studies:

In the *first* study new strategies in hyperphosphatemia management will be evaluated. Children with CKD usually take a fixed dose of phosphorus binder. The Phosphate Education Program (PEP) provides simple training tools to instruct patients/parents to eye-estimate meal phosphorus content based on phosphorus units concept and to self-adjust the number of phosphorus binders accordingly. A pilot study using PEP approach showed improved hyperphosphatemia control without reducing phosphorus intake in children. We will extend this concept to European pediatric nephrology units to prove its applicability and efficiency. Thus all ESPN members having interest in this study have the opportunity to contribute to this research project.

In the *second* study we investigate the effects of vitamin D supplementation on bone/mineral metabolism and the immune system in pediatric CKD patients. So far, the effects of vitamin D substitution on CKD-MBD (beside PTH levels) and the immune system are unknown. We hypothesize that vitamin D supplementation has beneficial effects on surrogate markers of CKD-MBD and the immune system. First, a pilot study (case-control study, n=40) will be performed by ESPN members in collaboration with the ESCAPE/4C consortium in order to obtain information regarding sample size requirements and realistic endpoints for the interventional trial.

Conclusions: The research activities performed by our working group and the contributing ESPN members are expected to improve the prevention and treatment of CKD-MBD associated complications in children. This is only been possible due to the generous support of the ESPN.