

SERUM PHOSPHORUS LEVELS, BUT NOT SERUM CALCIUM AND PTH LEVELS ARE ASSOCIATED WITH ABDOMINAL AORTIC CALCIFICATIONS IN PERITONEAL DIALYSIS PATIENTS

Saimir Seferi¹, Merita Rroji¹, Eriola Likaj¹, Myftar Barbullushi¹, Nestor Thereska¹

¹Dept of Nephrology- Dialysis- Transplantation, UHC "Mother Teresa", Tirana, Albania

INTRODUCTION AND AIMS: Vascular calcifications are important complications in patients receiving PD therapy. Simpler and inexpensive techniques such as plain X-ray can be used to provide important information about vascular calcifications in CAPD patients. Disturbed mineral metabolism has been suggested to play a major contributing role for vascular calcification in ESRD patients. The aim of this study was to evaluate the relationship of abdominal aortic calcifications with biochemical data of mineral metabolism in CAPD patients.

METHODS: We conducted a cross-sectional study in 38 stable patients (58.8 % males; mean age 55.5 ± 13.6 years; 23.6% diabetics and average duration of dialysis 28.36 ± 16.97 months) treated with CAPD for more than 6 months. Demographic and biochemical data were examined. Plain X-ray images of lateral lumbar spine from all subjects with abdomen empty from dialysis fluid were studied for calculation of semiquantitative vascular calcification scores as described by Kauppila. The severity of the anterior and posterior aortic wall calcification were graded individually on a 0-3 scale for each first four lumbar segments and the results were summarized to develop a score (range 0-24).

RESULTS: Kauppila scores revealed 21 patients (55.2%) with presence of abdominal aortic calcifications (AAC ≥ 1) and 14 patients (36.8%) with scores higher than 7. The mean AAC score of the study population was 5.03 ± 3.85 . We found that serum phosphorus levels increased significantly in patients with AAC score ≥ 1 comparing with patients without aortic calcification AAC score = 0, respectively 5.3 ± 0.3 mg/dl vs 4.2 ± 0.2 mg/dl ($P < 0.007$). But there was no significant difference in serum iPTH and calcium levels in patients with and without AAC, respectively 427 ± 346 pg/ml vs 348 ± 116 pg/ml and 8.5 ± 0.4 mg/dl vs 8.2 ± 0.3 mg/dl. The reason of the lack of significant difference in iPTH levels probably is related to the presence of either high or low levels of iPTH (high turnover or low turnover bone disease) in the group with aortic calcification. To study further this association we excluded from analysis patients with AAC score = 0, and we found that serum phosphorus levels increased significantly in patients with severe AAC score ≥ 7 comparing with patients with mild AAC score 1- 6, respectively 5.6 ± 0.3 mg/dl vs 4.8 ± 0.3 mg/dl ($P < 0.01$).

CONCLUSIONS: Our study demonstrates that abdominal aortic calcifications are highly prevalent in CAPD patients and strongly associated with serum phosphorus levels, but not with serum calcium and iPTH levels.

