Biochemical Correlations with Other Biomarkers in ESRD Hemodialysis Short Title: Biomarkers in ESRD Hemodialysis

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ABSTRACT

ESRD patients on HD have elevated FGF23, iPTH, and Hcy and have been individually linked to disordered mineral metabolism and CVD risk. This study evaluated the associations between FGF23, iPTH, Homocysteine, and routine biochemical parameters in CKD HD patients to bridge the literature gap. This cross-sectional observational study was conducted on 103 adult CKD patients receiving maintenance HD. The detailed baseline information of biochemistry laboratory parameters included Hg, CRP, Glucose, Creatinine, eGFR, K, Na, Ca, P, ALT, AST, iPTH, Hcy, and FGF-23. In the sample, 65 were male (63.1%), and 38 were female (36.9%), with the mean age, height, and weight of 64±13.64, 170 ± 6.85, and 79 ± 13.07. FGF23 levels were positively correlated with phosphorus (r=0.78, p=0.01), creatinine (r=0.78, p=0.01), iPTH (r=0.61, P=0.01), and homocysteine (r=0.65, p=0.01). It was negatively correlated with GFR (r=-0.64, p=0.01). No statistically significant correlation was found with Ca values (r=-0.12, p>0.05). Changes in FGF23, iPTH, and homocysteine levels together and in correlation with other biochemistry laboratory parameters are the earliest markers for HD patients. These parameter values can be used to guide strategies for prognostic issues and early treatment management.

Keywords: Chronic Kidney Disease, End-Stage Renal Disease, Fibroblast Growth Factor 23, Homocysteine, İntact Parathyroid Hormone, Mineral Metabolism

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