

BIOCHEMICAL AND CLINICAL CORRELATES OF EXTRACELLULAR MASS/BODY CELL MASS RATIO IN PERITONEAL DIALYSIS (PD) PTS (PTS)

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The ratio of extracellular mass (ECM) to body cell mass (BCM) is one of the most sensitive index of malnutrition. The objective of the present study was to examine ECM/BCM ratio in relation to biochemical and clinical status in PD pts. Sixty two PD pts were enrolled in the study from November 2000 to May 2008. On enrollment, demographic, clinical and biochemical data were recorded. ECM and BCM were measured using Bioimpedance Analysis (BIA). Pts were followed through November 2008. The mean age was 54 years. Fifty-five percent were female and the majority (65%) were African-American. Mean ECM and BCM were 62.4 ± 15 (SD) Lbs and 52.9 ± 15 (SD) Lbs respectively. Mean ECM/BCM ratio was 1.206 ± 0.197 (range: 0.73-1.62). Diabetics had higher ECM/BCM ratio than non-diabetics (1.29 vs. 1.18, $p=0.03$). ECM/BCM ratio correlated directly with age ($r=0.38$, $p=0.002$) and inversely with serum albumin ($r=-0.43$, $p=0.001$), creatinine (-0.24 , $p=0.08$), and total protein ($r=-0.31$, $p=0.026$). Using multivariate regression analysis, albumin (beta coefficient -0.44, $p=0.003$) and diabetes (beta coefficient 0.295, $p=0.02$) were significant predictors of ECM/BCM in PD pts. During the study period twenty one (34%) pts died. Pts were stratified by enrollment ECM/BCM ratio ≤ 1.2 and >1.2 . Upon 8 years of observation, the cumulative observed survival of PD pts with enrollment ECM/BCM ratio ≤ 1.2 were significantly better than those of pts with >1.2 ($P=0.04$). Using multivariate Cox proportional hazards analysis, adjusting for age, race, gender, diabetes and HIV status, enrollment ECM/BCM ratio was an independent predictor ($RR=1.037$, $P=0.018$) of mortality. For every 10% increase in the percent ECM/BCM ratio, the relative risk of death was increased by about 37%. A single enrollment ECM/BCM ratio was a strong independent predictor of mortality in PD pts.