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P263 -Factors affecting the changes in dry weight among Hemodialysis patient population

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Introduction:

Hemodialysis (HD) patients form a major share of patients who are on some kind of renal replacement therapy. Dry weight estimation is an important concept in this patient population and is normally based on clinical the assessment. The objective of this study was to identify and understand the factors which can have an effect on changes in dry weight in HD patients as this will not only help in aiding the clinicians in their clinical screening for dry weight changes but will also help them address the possible contributory factors in the long run.

Methods:

This prospective cohort study was carried out from July 2018 to December 2018, at a tertiary care hospital in Islamabad, Pakistan. It included all the consenting patients (by non-probability convenience sampling), who had received HD for at least 3 months and who didn't have any disability to communicate. A total of 78 patients were enrolled. An MBBS qualified doctor administered a proforma to the patient at the start of a one-month observational period that recorded predictors like age, sex, income, cause of renal failure, HD duration, HD regimen, dietary compliance, medicinal compliance and electrolytes etc. Dry weight as outcome was estimated clinically by the primary renal consultant at the start and end of this observational period. Statistical analysis included descriptive stats and building of multiple linear regression models using R statistical software version 3.5.2.

Results:

The study population included 42/78 males and a median age of 58 years. The mean duration on HD was 41 months while only 22/78 patients had a HD regime of three times per week. Dietary compliance was observed by 65/78 patients while 54/78 patients observed medication compliance.

Several multiple linear regression models were built using a combination of predictor variables mentioned in methods and the outcome of change in dry weight observed over a one-month period. The candidate linear regression model (Multiple R-square = 0.25, P = 0.02) showed that a rise in Albumin (Estimate=0.8, P=0.04) or a rise in number of intradialytic hypotension (IDH) episodes over last month (Estimate=0.2, P=0.005) were associated with a positive change in dry weight over a month. It was also seen that a rise in phosphate (Estimate=-0.27, P=0.008) or the patients on a thrice weekly compared to twice weekly HD regimen (Estimate=-1.2, P=0.009) were associated with a negative change in dry weight over a period of one month.

Conclusion:

Our study was able to identify Albumin and number of IDH episodes as the key variables that predict a positive change in dry weight over the coming month. Thus, in patients with higher albumin and IDH episodes in last month, we can consider gradually decreasing the ultrafiltration over the coming month. Similarly, a high phosphate level can reflect a poor nutritional or dietary compliance state and can predict a decrease in dry weight over the coming month thus necessitating a respective change in clinical approach.