IS THERE A RELATIONSHIP BETWEEN RATE OF CHANGE OF BLOOD VOLUME PER LITRE OF ULTRAFILTRATE EXPRESSED IN PERCENT (DBV/KG %) AND DRY WEIGHT? THE SEARCH FOR A QUICKER METHOD TO START PATIENTS ON AUTOMATED ULTRAFILTRATION AND CONDUCTIVITY CONTROL

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The use of relative blood volume monitoring with automated ultrafiltration and conductivity control has shown promise in reducing morbidity in dialysis patients by decreasing intradialytic hypotensive episodes. However the process of commencing patients on the NIKKISO automated control is time consuming with ten sessions required to extrapolate data for the automated process in practice usually more. It can also be awkward for patients due to restrictions on consumption of food and drink on dialysis sessions. The value that is acquired is the rate of change of blood volume per litre of ultrafiltrate expressed in percent (dBV/kg %) calculated from the graph of Relative Blood Volume against Time over three hours of dialysis. Clinical observation showed little variation in this value. A data collection was undertaken to evaluate the relationship between a patients dry weight and dBV/kg%.
The null hypothesis is that there is no relationship between the two variables. If this is correct then a 'normal' range can be used to circumvent the above process.
Aim; To study the relationship between weight and dBV/kg% and determine a range of values that can be applied to the general dialysis population.
Method; 20 dialysis patients had a minimum of five sessions on Relative Blood Volume monitoring. For each session the dry weight, dBV/kg% and total Ultrafiltration were recorded. Exclusions included patients with ultrafiltrate less than 500mls, increased relative blood volume during session and those on an Ultrafiltration profile.
Results; The mean value of dBV/kg% was 2.92 (95% C.I. 1.71-4.13). Analysis of the null hypothesis using Pearson testing p=0.83.
Conclusions; There is no relationship between dBV/kg% and dry weight on this data therefore a commencement value range can be estimated to circumvent the above start up process.