

EFFECT OF ULTRAFILTRATION ON AORTIC AUGMENTATION PRESSURE AND INDEX IN PATIENTS ON MAINTENANCE HEMODIALYSIS

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Aortic augmentation pressure and index are parameters that reflect the central aortic pressures. These parameters have a direct relationship with cardiovascular mortality and morbidity. In patients on chronic hemodialysis, hypertension has always been thought to be volume-mediated. Hence, an effective ultrafiltration during hemodialysis should lead towards a lower peripheral blood pressure. It is not clear whether ultrafiltration has the same effect in central blood pressures. The purpose of this study was to determine the effect of ultrafiltration on aortic augmentation pressure and index in patients on chronic hemodialysis.

We performed a prospective study on 129 patients on chronic hemodialysis. We measured their aortic augmentation pressure (AAP) and index (AIX) using applanation tonometry (SphygmoCor apparatus) at the beginning and at the end of a single dialysis session. We grouped the patients into 2: Group 1 included those who achieved an ultrafiltration of less than 1.8 liters, and Group 2 included those who achieved an ultrafiltration of more than 1.8 liters.

There was a bigger drop in the AAP in Group 2 than Group 1 at the end of the hemodialysis, however, this was not of statistical significance (drop in AAP 3.4 mmHg vs. 1.9 mmHg, $p=0.351$). There was no difference in the drop in AIX between the two groups at the end of the hemodialysis (drop in AIX 2.2 vs. 2.2, $p=0.995$).

In conclusion, ultrafiltration does not affect changes in AAP and AIX after a single hemodialysis session, although there is a trend for a bigger drop in AAP with greater ultrafiltration.