

ARE THE COMPLICATIONS OF ARTERIOVENOUS FISTULAS ASSOCIATED WITH AN AB-NORMAL ANKLE-BRACHIAL INDEX IN HEMODIALYSIS PATIENTS?

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Aim

The peripheral artery disease is frequent among patients undergoing hemodialysis much more than in the general population. The ankle-brachial index (ABI) is a potent tool to screen this pathology. We analysed the relationship between ABI abnormal values and arteriovenous fistulas (AVF) complications such as stenosis and thrombosis among chronically hemodialysis patients (HD).

Patients and methods

Thirty eight chronically HD patients have been followed during 4 years with 3 measures of ABI: the two first one year apart and the third 3 years later. The AVF complications (stenosis and thrombosis) have been recorded as well as other routine dialysis parameters: blood pressure (BP), phosphocalcic metabolism and cardiovascular risk factors. Patients were divided into two groups (based on their last ABI measure) according to an ABI less or higher than 0.9.

Results

Patients whose last ABI was <0.9 (n=15) were 71.6 years old (64.5 y. for ABI > 0.9; n=23) and underwent HD for 7.7 years against 11.6 years for those with an ABI >0.9.

AVF complications arose in half of them against 74 % for those with an ABI >0.9. Although non significant, their fistula survival mean time was shorter than the one observed when ABI > 0.9 (59 vs. 80 months).

Diabetes was present in 20% when ABI<0.9 and 30% in those with an ABI >0.9, 42% were active smokers and 50% ex-smokers against 23% in the ABI >0.9 group. Interestingly, the frequencies of hypertension and cv complications were similar in the two groups (between 90 and 100%).

A higher rate (85%) of calcifications (on chest x-ray) was observed in the group with ABI <0.9 against 62% when ABI>0.9. The only parameters which differed significantly between the two groups were a higher mean calcium rate during the 4 years of observation in the group with ABI <0.9(9.3±0.3 vs 8.5±0.5) as well as a higher predialysis systolic BP. Neither C-reactive protein, uric acid nor albumin differed between the two groups.

Conclusion

In our observational study, patients with ABI<0.9 had a higher rate of arterial calcifications, a higher rate of Ca over time, a higher predialysis SBP and a higher rate of active and ex-smokers. However, ABI<0.9 was not associated with a higher incidence of AVF complications compared to patients with an ABI>0.9. So, in the limits of our study ABI<0.9 did not predict a higher incidence of AVF thrombosis and stenosis. These observations would benefit from a larger scale HD population study.