Correlation between Alzheimer's Disease and elevated Pulse Wave Velocity

Aims: The arterial stiffening is considered an important risk factor for Alzheimers disease. The Pulse Wave Velocity (PWV) is measure of arterial stiffness. The aim of this study was to find correlation between elevated PWV and Alzheimer's disease.

Methods: PWV was calculated from time diversity propagation of the common carotid and femoral artery by Doppler ultrasound in 775 elderly patients with mean age of 71.2±8.7 years. The patients were divided into two groups: first (PWV > 10 m/s) and second (PWV ≤ 10 m/s).

Results: The mean PWV in total group was 10.12 m/s. In the first group (N = 315) was 11.73 m/s and in the second (N = 460) was 9.65 m/s. We diagnosed 13 (4.12%) cases and 4 (0.87%) of Alzheimer's Disease in first and second group respectivelly (Chi-squared 9.204, P = 0.0024 (Confidence interval [CI] = 1.0841 % - 6.1032%), difference = 3.25% . The incidence of Alzheimer's disease is 4.73 times higher in group with higher pulse velocity with cut-off value of 10 m/s. PWV strongly correlate with Alzheimer's disease in first group (r = 0.145, P = 0.009) than in the second (r = 0.119, P = 0.034).

Conclusion: There is a statistically significant difference in artery stiffness in patients with or without Alzheimer's disease. The incidence of this disease is 4.73 times higher in patients with arterial stiffness greater than the critical PWV (cut-off value 10 m/s). The PWV is in strong correlation with Alzheimer's disease.Proving the predictive effect of arterial stiffness in the onset of Alzheimer's disease requires additional studies.

**Correlation between Alzheimer`s Disease and elevated Pulse Wave Velocity**

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