Assessment of rheological properties of whole blood and plasma in patients with tinnitus - a preliminary study

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Abstract

Objectives: Tinnitus is a sensation of ringing in the ears in the absence of any physical source in the environment. 15-25% of adults experience some form of tinnitus. A common cause of tinnitus is noise, head injury, ototoxic substances, as well as disorders of blood and blood vessels. Vascular causes include: head - neck tumours, turbulent blood flow, problems with blood supply and inner ear cell damage. The aspect of rheology in terms of tinnitus has not been described yet. Participants: Twelve patients with tinnitus, aged 30 to 74 years. Main outcome measures: The subjects all underwent audiological and neurological evaluation. Rheological properties of whole blood and plasma were assessed as well. The Quemada model was used to describe the variability of red blood cells shape, as well as their tendency to form aggregates. Results: Reduced whole blood viscosity in the low shear rate range is observed in the studied patient group. Conclusion: On the basis of the experimental study, statistically different results of hemorheological measurements were observed in the evaluated group in comparison to a reference group

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