

THE CONCEPT OF CHRONIC CEREBROSPINAL VENOUS INSUFFICIENCY (CCSVI) IN MULTIPLE SCLEROSIS (MS): A CRITICAL REVIEW

Sandra Morovic

Department of neurology, UHC Sestre milosrdnice, Zagreb, Croatia

CCSVI is a syndrome characterized by stenoses or obstructions of the internal jugular and/or azygosveins with disturbed flow and formation of collateral venous channels. Venous anomalies are a field in which experts still have to agree upon many things. We analyzed the data on CCSVI as an entity and its association with MS, and revised the findings suggesting a possible connection between these two entities.

The methodology and results of all published studies on prevalence of CCSVI in MS patients was considered, as well as other work dealing with possible causes and explanations of venous, and vascular dysfunctions linked with MS.

CCSVI prevalence studies show a great variability in MS patients. However, a recent meta-analysis assessed an over 13 times increased prevalence in MS. Global hypo-perfusion of the brain, and reduced cerebral spinal fluid dynamics in MS

was shown to be related to CCSVI. Postmortem studies show a higher prevalence of intraluminal defects in the main extracranial vein in MS patients in respect to controls.

Careful data analysis may help us conclude that great variability in prevalence of CCSVI in MS patients can be a result of different methodologies used in vein assessment, training, applying of unapproved diagnostic criteria, or different approach to the problem itself. CCSVI can be added to the list of multiple factors involved in MS pathogenesis. It has been proven that smoking is the most important risk factor for endothelial cell damage, that vitamin D has a protective role and Epstein-Barr virus passes the blood-brain barrier by invading the endothelial cells, therefore, epidemiologically, linking the imbalance of these three factors to MS through autoimmunity.