

EXPRESSION OF REGULATORY PROTEINS IN CHOROID PLEXUS CHANGES IN EARLY STAGES OF ALZHEIMER'S DISEASE

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The role of choroid plexus in Alzheimer's disease (AD) is being increasingly recognized. Recent studies suggest that the choroid plexus has a more important role in physiological and pathological brain functions than previously appreciated. To obtain additional insight on choroid plexus function, we performed a proteomic analysis of choroid plexus samples from AD stages I-II (n = 16), III-IV (n = 16), and V-VI (n = 11), and 7 age-matched control subjects. We used differential 2D electrophoresis (2-D DIGE) coupled with mass spectrometry to generate a complete picture of changes in choroid plexus protein expression occurring in AD patients. We identified 6 proteins: 14-3-3 β/α , 14-3-3 ϵ , moesin, proteasome activator complex subunit 1 (PSME1), annexin V, and aldehyde dehydrogenase (ALDH), which are significantly regulated in AD pathology ($p < 0.05$, 1.5-fold variation in expression comparing with control samples), with central physiological functions, including mitochondrial dysfunction and apoptosis regulation, and able to model key pathological events. The data presented here contribute additional significance to the emerging importance of molecular and functional changes of choroid plexus function in the development of AD pathology.