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MEETING ABSTRACTS

SERUM CHOLINESTERASE ACTIVITY AND ALZHEIMER DISEASE COMORBIDITIES - CAN BARIATRIC SURGERY CHANGE YOUR SYMPATHETIC PRONE STATE?

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Alzheimer disease comorbidities, such as hypertension, obesity, metabolic syndrome, diabetes mellitus and inflammation are all associated with impaired sympathetic/parasympathetic response.

Inherited and/or acquired sympathetic prone state, expressed by elevated serum Acetylcholinesterase (AChE) can lead to excessive inflammatory load and cognitive decline.

To evaluate the sympathetic/parasympathetic balance we measured serum cholinesterase activities in stroke, myocardial infarction, diabetes mellitus, morbid obese patients and apparently healthy control. Our findings identify the potential value cholinesterases as possible biomarkers in diseases associated with cerebro-cardiovascular outcome.

Recently we found that serum AChE activity increased with BMI in a dose-dependent manner until it reached a peak level at BMI of 30-35 kg/m², followed by a plateau ($p<0.001$, n=1,450). Similarly, AChE activity increased with waist circumference categories ($p<0.001$ for men and $P=0.013$ for women).

The Obesity-related AChE resistance phenotype may be reversed following laparoscopic sleeve gastrectomy (LSG) surgery and correlates with metabolic outcomes (% excess weight loss, %fat, and delta Homeostasis Model Assessment (HOMA)).

Further long-term studies will be needed to validate and evaluate the beneficial effect of AChE reduction post bariatric surgery and its possible relation to cognitive decline.