

P021

## Role of histamine and diamine oxidase enzyme in Multiple Sclerosis

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**Background/objectives:** Multiple Sclerosis (MS) is a chronic inflammatory disease of the Central Nervous System (CNS) which is characterized by demyelination and axonal loss. It has been shown that Diamine Oxidase (DAO) enzyme degrades histamine. Histamine has a role in increasing permeability of Blood–Brain Barrier (BBB) that leads to immune cells infiltration of CNS and has a proinflammatory effect via H1R receptor. The objective of the project is to measure serum levels of histamine and DAO enzyme of patients with Relapsing Remitting Multiple Sclerosis (RRMS) in comparison with healthy control subjects.

**Design and methods:** In a case-control study, venous blood was collected from RRMS patients (n=60) and healthy subjects (n=60) as control group. The serum levels of histamine and DAO enzyme were measured using ELISA method.

**Results:** Decreased serum level of DAO enzyme and elevated level of histamine has been observed in patients with RRMS in comparison with control group (P value  $< 0.05$ ).

**Conclusions:** It should be considered that although defect of DAO enzyme can cause elevated serum levels of histamine in MS patients, low level of this enzyme can also elevate serum levels of histamine which can contribute in pathogenesis of MS.