

**ABSTRACT BOOK
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Serum Mangan (Mn) Levels and Superoxide Dismutase (SOD) Enzymes Activity in Obstructive Sleep Apnea Syndrome (OSAS) Patients

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Trace elements are essential nutrients with regulatory, immunologic, and antioxidant functions resulting from their action as essential components or cofactors of enzymes throughout metabolism. They play a part in the synthesis and structural stabilization of both proteins and nucleic acids. Therefore, imbalances in the optimum levels of trace elements may adversely affect biological processes, and are associated with many diseases. Trace elements like manganese (Mn), copper (Cu), zinc (Zn) etc. have been studied in many diseases, including autoimmune diseases, cardiovascular, hypertension and psychiatric disorders[1,2].

Obstructive sleep apnea syndrome (OSAS) is a disorder that affects the respiratory system and upper airway during sleep (apnea, hypopnea). Continuous apnea/hypopnea in OSAS results with cardiovascular and cerebrovascular morbidity and is emerged as an independent risk factor for mortality[3]. In this syndrome, as a cause of cardiovascular risk, increased oxidative stress and reduced antioxidant defense of the body is involved. In this study, we aimed to determine the levels of mangan(Mn) element with related antioxidants of superoxide dismutase enzymes in OSAS patients and these levels were compared with control groups.

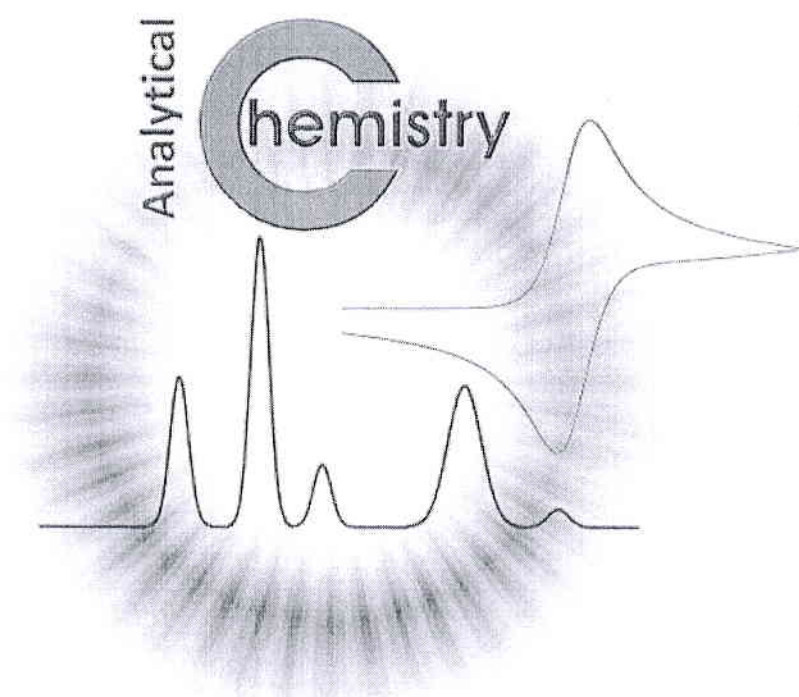
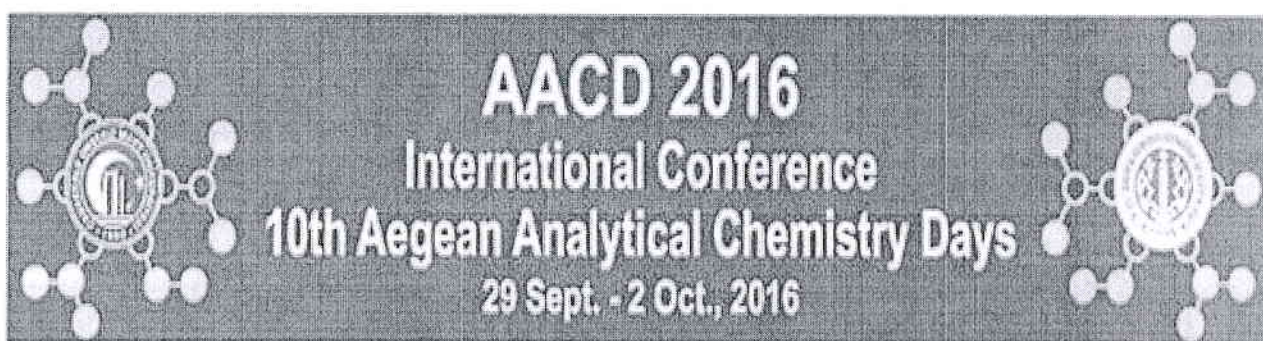
Our study consists of 38 OSAS patients and 27 control individuals. Serum samples were taken after polysomnographic examination. Serum Mn (II) concentration from patients and healthy control were measured by GFAAS. Antioxidant enzyme activities of SOD were determined using enzyme-mediated immuno-sorbent (ELISA) detection. Results are given as mean \pm SD and data were compared using student-t test, $p < 0.05$ were regarded as significant. Serum and Mn(II) levels in patients with OSAS were significantly lower than control individuals ($p < 0.0001$). Serum SOD activity in OSAS group were lower than control subjects but there was no significance ($p > 0.05$).

Our results suggested that OSAS patients have lower Mn(II) levels and decreased SOD activities compared to healthy controls. It is clear that in OSAS patients the antioxidant capacity is reduced following by increased oxidative stress. In conclusion, supporting of Mn(II) can increase the activities of antioxidant enzymes in OSAS patients.

Keywords: GFAAS, Mn (II), SOD, Antioxidant,

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Serum Selenium(Se) Levels and Related Antioxidant Enzyme Glutathione Peroxidase(GPx) Activity in Obstructive Sleep Apnea Syndrome (OSAS) Patients

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Macronutrients are micronutrients chemical elements essential to life in large quantities. Selenium(Se) is an essential micronutrient at low concentration but toxic at high concentration while a relatively small difference between these levels. Human body uses selenium to produce glutathione peroxidase, which works with vitamin E to protect cell membranes from damage caused by dangerous, naturally occurring substances known as free radicals produced by oxidative metabolism[2]. Metabolic syndrome has become a major global disease. Four major cardiovascular disease risk factors, i.e., visceral obesity, dyslipidemia, hyperglycemia, and hypertension, have been studied separately, but the association of these factors has recently become the focus of research[1].

Obstructive sleep apnea syndrome (OSAS) is a disorder that affects the respiratory system and upper airway during sleep (apnea, hypopnea). Continuous apnea/hypopnea in OSAS results with cardiovascular and cerebrovascular morbidity and is emerged as an independent risk factor for mortality[3]. In this syndrome, as a cause of cardiovascular risk, increased oxidative stress and reduced antioxidant defense of the body is involved. In this study, we aimed to determine the levels of selenium (Se) element with related antioxidants of glutathione peroxidase (GPx) enzymes in OSAS patients and these levels were compared with control groups.

Our study consists of 38 OSAS patients and 27 control individuals. Serum samples were taken after polysomnographic examination. Serum Se(IV) concentration from patients and healthy control were measured by GFAAS. Antioxidant enzyme activities of GPx were determined using enzyme-mediated immuno-sorbent (ELISA) detection. Results are given as mean \pm SD and data were compared using student-t test, $p < 0.05$ were regarded as significant. Serum Se(IV) levels in patients with OSAS were significantly lower than control individuals ($p < 0.0001$). GPx activity in OSAS patients were lower than controls ($p < 0.01$).

Our results suggested that OSAS patients have lower Se(IV) levels and decreased GPx activities compared to healthy controls. It is clear that in OSAS patients the antioxidant capacity is reduced following by increased oxidative stress. In conclusion, supporting of Se(IV) can increase the activities of antioxidant enzymes in OSAS patients.

Keywords: GFAAS, Se (IV), GPx.

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