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# Neuromyelitis Optica Spectrum Disorders (NMO) Concomitant with Autoimmune Diseases

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**Background:** Neuromyelitys optica (NMO) is an infrequent demyelinating disease of the central nervous system (CNS) that causes lesions in the optic nerve, spinal cord and brain . Literature data shows an ever-growing list of autoimmune diseases associated with NMOSD . The goal of this study was to compare and recognize and the basic and clinical features in NMOSD patients without and with concomitant autoimune diseases.

**Methods:** A case-control study between patients with a definite diagnosis of NMOSD, referred to sina hospital, a tertiary care referral center in tehran from, 2015 to 2016 conducted. Seventy nine NMOSD patients, both with concomitant autoimmune diseases (n = 18, case group) and without concomitant autoimmune diseases (n = 61, control group) were enrolled. The demographic data consist of gender, age, disease onset age, disease duration, family history of NMO and MS, smoking habit, passive smoker, and also clinical and laboratory data including annual relapse rate (ARR), expanded disability status scale (EDSS), onset of autoimmune disease before or after NMO and NMO IgG status were collected. Data were processed by the independent sample t-test and the logistic regression was applied to evaluate association among variables .

**Results:** Our results revealed a significant relationship between case and control in NMO onset age (37.50±9.84 vs 30.72±10.87, p value= 0.02, (95%CI= 1.08-12.47).the female to male ratio was 8:1 in case and 4.54:1 in control group.

There were no significant differences in other characteristic variables between case and control groups. NMO IgG positivity was 52.9% and 53.4% in case and control group individually. The mean EDSS was 3.27±1.89 in case group and 2.89±2.11 in control group but this difference was not statically significant (p value= 0.49) even after adjusting gender, age and disease duration. The mean ARR was not significant and calculated 1.18±.88 in cases and 0.87±0.71 in controls (p-value = 0.14).

**Conclusions:** The knowledge regarding basic and clinical studies of the NMOSD associated with autoimmune diseases is limited. Results of our study illustrate that several autoimmune diseases may possibly be co-exist with NMOSD and the existence of autoimmune diseases may aggravate the disease course in NMO patients. More studies are required to investigate the efficiency of concomitant autoimmune disease effect on the course of NMOSD.