

Anti- JCV Antibody Sero-Positivity and Index Value Among Iranian Patients with Multiple Sclerosis and Its Correlation with Demographic Data and Previous Therapies

Sogol Koolaji<sup>1</sup>, Narges Sistany Allahabadi<sup>1</sup>, Arash Ahmadi<sup>1</sup>, Mohammad Ali Sahraian<sup>1</sup>, Sharareh Eskandarieh<sup>1</sup>, Abdolreza Naser Moghadasi<sup>1</sup>, Amir Reza Azimi<sup>1</sup>

<sup>1</sup>MS Research Center, Neuroscience Institute, Tehran University of Medical Sciences, Tehran, Iran

**Background:** Anti-JC virus (JCV) antibody index is the predict-ing factor of progressive multifocal leukoencephalopathy (PML) for patients with multiple sclerosis (MS) who are treated with natalizumab.

**Methods:** This cross-sectional study assessed all received anti-JCV antibody test results of Iranian patients with MS between January 2014 and December 2016. Demographic data and disease characteristics were also obtained. After data quality control, sta-tistical analysis was done using logistic regression.

**Results:** Among 803 patients with MS who were observed, the prevalence of anti-JCV antibody positivity was 67.9% (mean of index = 2.23; standard deviation (SD) = 1.16), and 67.6% of posi-tive patients had index =1.5. Males were more anti-JCV antibody positive than females (81.7% and 64%, respectively; sig. <0.001, crude odds ratio (OR) = 2.51, confidence interval (CI): 1.65– 3.81). Patients =50 years had higher positivity prevalence com-pared to patients =18 years (sig. = 0.021; adjusted OR = 3.45, CI: 1.20–9.86). Patients who lived in cold regions had significantly more prevalence of positivity (no. of cases = 403; sig. = 0.043 and crude OR = 1.86, CI: 1.02–3.39) and higher rate of index =1.5 (sig. = 0.017; crude OR = 3.99, CI: 1.79–8.88). Disease onset age between 28 and 37 years was more positive compared to 18–27 years (N = 480; sig. = 0.02; adjusted OR = 1.85, CI: 1.09– 3.14) but correlated reversely with index (sig. = 0.01).

**Conclusion:** Age, male gender, onset age, and cold area residency significantly influenced anti-JCV antibody positivity prevalence. Only age of onset and cold area residency related to the index. No significant difference was observed between the previous type of disease-modifying drugs, dosage and duration of treating with them, and anti-JCV antibody positivity and its index.