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Letter to the Editor

Increasing Incidence and Male to Female Sex Ratio of Multiple Sclerosis in Tehran, Iran: A Population-Based Study

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Dear Editor-in-Chief

Multiple sclerosis (MS) is a chronic inflammatory disease and its incidence and prevalence is increasing globally. Women are more likely to suffer from MS, with variable female to male ratio. Iran has the highest MS prevalence rate in the Asia (1). The MS incidence was 6.02 per 100000 populations in 2013 in Tehran, Iran (2).

The study purpose was to determine the incidence and female to male ratio of MS amongst patients from 2006 to 2017 in Tehran, Iran. This study was conducted under the consideration of Tehran University of Medical Sciences Ethics Committee. The official registration code for this study is: IR.TUMS.VCR.REC.1397.473.

A longitudinal population-based study was conducted amongst MS patients referred to Iranian MS Society (IMSS) of Tehran Province, the capital of Iran (3). The diagnosis was confirmed by neurologists by the use of the latest McDonald diagnosis criteria (4). A structured questionnaire was designed in order to measure the epidemiological variables of MS (3). In order to estimate MS incidence; this study applied the disease onset years with respect to the data reported by annual census of Statistical Center of Iran. All analyses were performed using R software program, version 3.5.1.

The incidence of MS was 7.56 per 100,000 people in 2017 (10.61 and 4.21 per 100,000 in females and males, respectively), which has increased in recent years. Amongst 11152 multiple sclerosis patients who were evaluated from 2006 to 2017, there was a significant reduction (*P*-value=0.01) in female to male ratio over the time from 3; 1 in 2006 into 2.2:1 in 2017. This ratio changes demonstrated an ascending pattern from 2006 to 2010 (3.1 to-3.5, respectively), and also a descending pattern from 2010 to 2017 (3.5 to-2.2, respectively). Consequently there were significant changes in the female to male ratio by passing the time, with respect to the Pearson correlation coefficient (Pearson=-0.69, *P*=0.01).

In conclusion, MS incidence is increasing in Tehran, and it is amongst the cities with the highest MS incidence in Iran and Asia (5, 1). Female to male ratio was decreased from 2006 to 2017. Although the majority of the MS cases are registered in IMSS, but due to non-mandatory registration,

here may be a time delay between disease onset and registration (3, 6).

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Conflict of interest

The author declare that there is no conflict of interest.

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