Editorial

Multiple sclerosis in the Middle East and North Africa region

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The Middle East and North Africa region (MENA) encompasses a diverse and large area from Morocco to the west to Iran in the east. According to the World Bank, the population in the MENA was around 450 million in 2018, and around a third of the population is under the age of 15 years.

A rapid population growth and urbanisation has led to dietary changes towards a westernised diet leading to an explosion of metabolic diseases and diabetes.[1]

Despite a sunny climate, the MENA region has a high prevalence of vitamin D deficiency.[2,3] The vitamin D deficiency is more than can be accounted for by religious practices (wearing the veil, low sun exposure), because it is observed in the general population despite adequate sun exposure. Vitamin D receptor genetic polymorphisms are suggested to play a role.[4] Beside its role in bone health and in immune function, correcting vitamin D deficiency may even have an impact on cognitive function in patients with multiple sclerosis (MS).[5]

Smoking is considered a risk factor for MS[6] and there is evidence that smoking contributes to disease progression.[7] Cigarette smoking is highly prevalent in the MENA region especially in men, where some countries have a prevalence rate of up to 50%.[8] A worrisome trend of increased waterpipe smoking worldwide has also been observed,[9] especially in Arab youth in whom a dramatic increase has been reported in the 13–15-year age group.[10] Similar to cigarette smoking, waterpipe smoking has been identified as a risk factor for MS.[11]

Changes is dietary habits, a high prevalence of smoking and vitamin deficiency, as well as an increase in the number of individuals at risk, may contribute to the observed rise in MS incidence in the region, as reported by Yamout et al. in this special edition.[12]

Consanguinity remains high in certain parts of the MENA region and the prevalence of familial MS was reported to be high in certain countries,[13] but there is a clear lack of good population-based genetic studies. Most of the reports on genetic polymorphisms or even human leukocyte antigen association are underpowered, as shown in the paper by Maghbooli et al.[14] Some of the limitations for doing large genetic studies are related to political instability in the region. Several countries in the MENA region are areas of active conflict. This has resulted in a major increase in displaced persons, who have little access to organised healthcare. Chronic diseases such as MS become a huge societal burden as most patients have to rely on non-governmental organisations (NGOs) for support. The cost of medication becomes an important factor dictating treatment decisions for MS patients. As outlined by Zeineddine et al.[15] in this special edition, many of the Syrian refugees that are treated for MS in Lebanon have to obtain interferon from Syria or receive rituximab infusions, the costs of which are covered by private donors or NGOs.

Another challenge in the MENA region is the limited number of MS specialists and specialised MS centres underscoring the difficulty in making diagnoses such as neuromyelitis optica (NMO) or NMO spectrum disorders. As reported by El Roughani et al.,[16] the prevalence of these conditions in the MENA region is largely unknown, although recent efforts at establishing a registry for these conditions is under way.

Adapting and validating questionnaires for the measurement of quality of life or fatigue is an area of active development as reported by Farran et al.,[17] in

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which the authors were able to validate the Arabic multiple sclerosis international quality of life (MusiQoL) and modified fatigue impact scale (MFIS). Their data showed that quality of life was impacted by psychosocial fatigue in addition to age and disease type. An interesting finding in their study was the significantly worse impact of MS on women's 'psychological wellbeing' and 'coping'.

Despite the challenges listed above, there are some rays of hope. There are several local efforts to increase awareness about the disease among the public. These include public sessions about the disease, as well as an electronic/social media presence and the establishment of local MS societies. Several countries are now participating in multicentre clinical trials, and there is the emergence of a few multidisciplinary MS centres.

Awareness of the need for mental health research is also emerging[18] and addressing these needs may lead to a better quality of life for patients with MS.

At the regional level, the establishment of the MENACTRIMS is helping to bring together regional experts and establishing treatment guidelines for the MENA region.[19] A concerted effort to create common databases and establish multinational collaborations needs to be initiated to address the prevalence of demyelinating diseases and the genetic risk factors.

The heterogeneity of MS characteristics among different populations and various ethnic minority populations is a topic of importance. As pointed out by Baalbaki,[20] a differential diagnosis of MS may be particularly difficult due to the presence of atypical infections such as Toxocara infection, especially in places with non-hygienic food and water supplies. This current special issue of *MSJ–ETC* has invited authors from MENA countries with specific know-how in each field to provide review papers that focus on several important topics of MS in MENA. *MSJ–ETC* has a special commitment to raising the geographical specificities of MS in different parts of the world.

Conflict of Interests

Funding

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