

A Short Perspective on the Risk Profile of Epilepsy in Iran

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KEYWORDS

Asia; Case-control; Epilepsy; Iran; Risk Factors.

INTRODUCTION

Epilepsy is a major neurological disorder with differing particularities in different cultural set-ups [1]. Middle East, for multitude of reasons, is culturally unique and assorted across religious, dietary, social, familial, political aspects. Recently, it has been demonstrated that the median prevalence of lifetime epilepsy had been under-estimated by three fold for this region [2]. Iran, one of the important Middle Eastern countries located in the southwest of Asia and has a population of over 70 million. A meta-analysis conducted for Iran reports an epilepsy prevalence of 5.0/1000; however, a closer look indicates several issues in this work with inappropriate inclusion, and cluster of studies [3]. Despite seeming apprehensions, Iran has a very sophisticated healthcare system with all population covered under insurance and upto 90.0% of medical cost reimbursed [4]. Here we provide a short quick overview of epilepsy risk profile for Iran.

Acute

The burden of neurocysticercosis (NCC) in Iran is unknown but is reportedly unexpected [5]. A PubMed search with words 'neurocysticercosis' and 'Iran' provided only two publications; none of them provide suitable details. Although, The Holy Quran prohibits consumption of pork, its availability and consumption may not necessarily be completely inexistent; although limited, as observed in other Muslim populations [6]. Incidence of tuberculosis in Iran is low (21/100,000) with restricted only to Sistan region of Iran, at the Border with Afghanistan [7]. Malaria, another important risk factor of epilepsy, is at pre-elimination stage in Iran; with epilepsy-relevant falciparum infection (*Plasmodium vivax* malaria: An unusual presentation) restricted to endemic East and South-

East regions of the country [8]. Iran similarly has progressed with near elimination of Schistosomiasis with nearly no cases since 2001 [9]. Although Iran is not endemic for paragonimiasis, the burden of toxoplasmosis is particularly high, including children [10,11]. The prevalence of HIV-AIDS in Iran is low, mostly among injected users, even among prison population (2.1%) which traditionally has high HIV prevalence [12].

Chronic

Although pregnancy and birth related factors (hemorrhage, gestational hypertension, prematurity, etc.) are highly important risk factors for epilepsy, more than infections, the burden of these disorders also seem to be low in Iran [13,14]. In this country, in 2010, antenatal care coverage was 94.0% adequate with 97.0% births were attended, equally so in rural populations[15]. However, one of the interesting observations comes from the high frequency of desired cesarean sections that are not medically needed [16]. Similar trends are also noted in other Asian settings such as China; where such trends, like Iran, are to be due to high insurance coverage of the populations [17]. Moreover, although some studies in Iran fail to show the protective role of breast feeding in epilepsy; this does show a major role in more sophisticated surveys performed by the author [18,19].

Many risk factors particularly in the domain of mental health remain overshadowed by more popular risk factors, particularly infections [14]. Similarly, in Iran, a national survey reported mental health issues particularly depression as highly prevalent in almost a quarter of population; two-fold higher among women but with no rural-urban differences

[20]. Another risk factor of importance in Iran context is that of head injuries which cause 28.0% of years of life lost in Iran. Iran data shows that road traffic injuries increased from 109.7 to 400.6/100,000 between 1997 and 2005 with a decrease to 343.1 by 2010 [21]. Another challenge for risk of epilepsy in Iran comes from high prevalence of substance abuse despite religious instructions by The Holy Quran [22]. It is known that 8.0% of Iran population is permanently addicted with rates considered highest in the World and a yearly business of 140 metric tons of drugs [23]. This is although restricted to some regions such as Kerman which has repeatedly shown highest opium usage in Iran with no rural-urban differences [24]. In Iran, its screening might be easier since urine examination for opioid is mandatory for obtaining permission for marriage, license for driving heavy vehicles and employment [25]. Similarly, for migraine, the high prevalence (7.1-18.1%) is noted among middle-aged populations and among females in various parts of Iran; mostly in Tehran and least in Zahedan province. Its prevalence among children is also high (up to 12.3%). Similarly, stroke is a major epilepsy risk factor among selective population groups in Iran [26].

CONCLUSION

In conclusion, we believe that although having a sophisticated healthcare system is a desired achievement; this may have negative epilepsy-related repercussions, as demonstrated with an example of greater access and use of cesarean deliveries. As expected, with respect to epilepsy, Iran is predominantly a chronic risk factor country. Many epilepsy-related infections such as paragonimiasis, schistosomiasis, HIV-AIDS, tuberculosis and malaria show favorable picture in Iran, the challenge with respect to the risk of epilepsy (and other neurological and mental health conditions) lies with depression, migraine, toxoplasmosis, substance abuse, stroke, and trauma.

CONFLICTS OF INTEREST

The authors have declared that no competing interests exist.

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