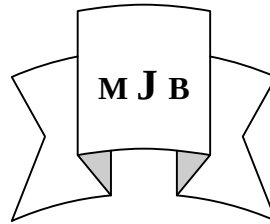


Prevalence Rate of Multiple Sclerosis in Iraq: A Retrospective Study

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Abstract

Multiple sclerosis has a multifactorial etiology, including both genetic and environmental factors. The aim of the study is to determine the prevalence rate of multiple sclerosis in Iraq and to determine the effect of the recent war on the registration of patients with multiple sclerosis in the whole country. The case collection depended on the multiple sclerosis clinic in Baghdad which is the only multiple sclerosis clinic in Iraq. This clinic receives patients referred from other centers and clinics in the country where they are reevaluated, registered and treated there, using the Mc Donald criteria in the diagnosis. The July-2007 population estimate was used in the study. The population of Iraq is 27,499,638.

The prevalence day was the fifteenth of July-2007. The number of patients that were registered at the multiple sclerosis clinic in Baghdad were (1207). The cranial nerve involvement form 56.42% of the initial symptoms and signs. Motor weakness is the initial symptom and sign in 32.15%, while the sensory symptoms form only 4.2%. The cerebrum is the site of multiple sclerosis lesions (by M.R.I.) in 67.2%. The spinal cord is the site in 21.95%. Finally the prevalence rate of multiple sclerosis in the whole country is (4.4 /100,000).

الخلاصة

يعد مرض تصلب الأعصاب المنتشر من الأمراض التي لها اسباب متعددة والتي تتضمن كلا من العوامل الوراثية والبيئية. تضمنت اهداف الدراسة معرفة نسبة شيوع مرض تصلب الاعصاب المنتشر في العراق بالاضافة الى معرفة تأثير الحرب الراهنة في الحد من تسجيل المرضى المصابين بهذا المرض في ارجاء القطر كافة .

تم جمع الحالات من مركز الأعصاب المنتشر في بغداد وقد تم احتساب النفوس الشهر السابع 2007 علما ان نفوس العراق (27499638) وقد تم اعتماد خاصية مكدونالد كاساس لتشخيص تلك الحالات .

في 15/7/2007 تم احتساب النسب وكانت نسبة المرضى الاحياء الذين سجلوا في هذا المركز (1207) .

كانت نسبة شمول الأعصاب القحفية بالمرض تقدر 56,42 % . 32,15 % شمل ضعف الاعصاب الحركية في حين 4,2 % فقط شمل الاعصاب الحسية . بواسطة الرنين المغناطيسي وجد ان 67,2 % من المرض تركز المرض لديهم في الجزء العلوي من الدماغ بينما 21,95 % في الحبل الشوكي . لقد كانت نسبة شيوع المرض في انحاء القطر 4,4 / 100000 .

Introduction

The frequency of Multiple Sclerosis varies among different geographical areas in the world [1,2]. Genetic factors, sociocultural and geoclimatic factors

influence Multiple Sclerosis susceptibility. This leads to the fact that Multiple Sclerosis has a multifactorial etiology, including both genetic and environmental factors[3]. Worldwide, Multiple Sclerosis occurs

with much greater frequency in higher latitudes; between 40 and 60 degrees north and south latitude (both in the northern and southern hemisphere) [4]. Multiple Sclerosis also differs in different ethnic groups living in the same region [5-9].

We estimate Multiple Sclerosis point prevalence rate in Iraq which was historically known as Mesopotamia [10] or the land between the two rivers. It was home to the world's first known civilization, the Sumerian culture, which was followed by the Akkadians, the Babylonians, Assyrians and Chaldean culture.

Iraq lies in the heart of the Middle East between 30 and 38 latitudes in the northern hemisphere. It is comprised of four main geographical regions. First is the desert in the west and southwest area of the country. Second is the rolling upland between the upper Tigris and Euphrates rivers (known as Al jazira). Third, the highlands in the north and northeast region of the country. Finally the Alluvial plain through which the Tigris and Euphrates rivers flow. The climate of Iraq is overwhelmingly characterized by desert or desert like, arid conditions.

Methods

The prevalence day was on the fifteenth of July-2007. The population of Iraq is 27,499,638 according to the July-2007 estimate. The Arabs form 75% of the general population, while the Kurds form only 20%. The rest (5%) belong to the Arab Turkmen, Armenians, Yazidis and Assyrians. Moslems form 97% of the population, and the rest are Christians and other.

There is only one Multiple Sclerosis Clinic in Iraq and it lies in Baghdad (established on March-2001). Cases of Multiple Sclerosis are collected from the Multiple Sclerosis Clinic in Baghdad. This clinic receives cases referred from other centers or hospitals in the country for reevaluation, registration and further treatment, where the diagnosis depends on the McDonald Criteria [11,12].

Analysis of the prevalence (point prevalence) rate [13] of Multiple Sclerosis in Iraq depended on the number of cases registered by the Multiple sclerosis Clinic in Baghdad, as well as, the total population of Iraq reported recently (2007).

Results

The number of patients with Multiple Sclerosis that were registered at the Multiple Sclerosis Clinic and that were alive was (1207). The male patients form (338) of the total number, with a prevalence rate of 1.2. Their ages ranged between 30-49 years old age group. The female patients form the rest which is 869 with a prevalence rate of 3.2 and an age ranging between 20-39 years old. This makes the prevalence rate of multiple sclerosis in Iraq (4.4/100,000). The cranial nerve involvement form 56.42% of the initial symptoms and signs (table 1). Motor weakness is the initial symptoms and signs in 32.15%, while the sensory symptoms form only 4.2% (table 2). The cerebrum is the site of multiple sclerosis lesions (by M.R.I.) in 67.2%. The spinal cord is the site in 21.95%. The rest which is 10.85% is seen in the posterior

fossa(cerebellum only or brainstem)(table 3).

Discussion

The prevalence rates of Multiple Sclerosis have been reported to be as high as more than 200/100,000 in Southeast Scotland[14,15] and less than 1/100,000 in a number of Asian Countries[16].

In Jordan,the Multiple Sclerosis prevalence rate was 20/100,000(17), while it was 4.4/100,000 in Kuwait [18].A later study (in Kuwait) reported a rate of 9.5/100,000(19).In Saudia Arabia, the prevalence rate was 8/100,000[20].In Tunisia,it was between 3.3 and 10/100,000[21].

A former study done in Iraq revealed a Multiple Sclerosis prevalence rate of 3.4/100,000 [22]. Our understanding of specific genetic and environmental factors for developing Multiple sclerosis has improved recently but studies are still needed to asses the interactions of those factors[23]. In addition,there is an increased awareness of the disease ,increased newly developed diagnostic techniques and development of new local triggering environmental factors.Iraq has faced three wars since 1980 and different weapons were used in these wars.This makes Iraq a polluted area for these weapons which could be a triggering local environmental factor for Multiple Sclerosis in the country.The last war (2003) made the registration(at the multiple Sclerosis Clinic in Baghdad) of patients with Multiple Sclerosis difficult.This is because the patients faced many problems on going to Baghdad to get registered there.One of theses problems was the unstable security

situation.Our study revealed that multiple sclerosis is prevalent more in females with the cranial nerve involvement forming most of the initial symptoms and signs.Also the cerebrum and the spinal cords are the major sites for the multiple sclerosis plaques.

The presence of only one Multiple Sclerosis Clinic in Iraq is a major problem.This means that there is still a good number of patients which are not registered yet by the Multiple Sclerosis Clinic in Baghdad.This recent study in Iraq discloses a slightly higher multiple Sclerosis prevalence rate than that reported previously.

We recommend establishing other Multiple Sclerosis Clinics in other cities of Iraq, especially in Mosul,Kurdistan region,Babylon and Bashra.

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Table 1 Number of patients with multiple sclerosis and prevalence rates per 100.000 inhabitants in Iraq , July 15 / 2007.

male			female	
Age group	No.	rate	No.	rate
0-9	0	0.00	1	0.003
10-19	14	0.05	32	0.11
20-29	69	0.25	355	1.3
30-39	104	0.37	344	1.25
40-49	121	0.44	111	0.4
50-59	30	0.1	26	0.09
60-69	0	0.00	0	0.00
70 +	0	0.00	0	0.00
Total	338	1.2	869	3.2

Table 2 Initial symptoms or signs in prevalent patients with multiple sclerosis in Iraq.

Initial symptoms and signs		No.	%
1	Cranial nerve involvement.	681	56.42
2	Motor weakness.	388	32.15
3	Sensory symptoms.	52	4.3
4	Cranial nerve involvement and motor weakness.	36	3
5	Cranial nerve involvement and Sensory symptoms.	20	1.66
6	Motor weakness and sensory symptoms.	17	1.4
7	Motor weakness and autonomic dysfunction.	13	1.07

Table 3 Location of multiple sclerosis lesions by MRI .

Site		No.	%
1	Cerebrum.	811	67.2
2	Spinal cord.	265	21.95
3	Others (only cerebellum or brainstem).	131	10.85