Causes of delayed management of multiple sclerosis patients in Nasr city health insurance hospital

Thesis

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أسباب التأخر في تشخيص مرضى التصلب المتعدد في مستشفى التأمين الصحي بمدينة نصر

رسالة

توطئة للحصول علي درجة الماجستير في الطب النفسي العصبي

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Contents

List of Abbreviations

ADEM	: Acute demylinating encephalomyelitis
ALT	: Alanine aminotransferase
AON	: Acute optic neuritis
CAR	: Cancer associated retinopathy
CBC	: Complete blood count
CDMS	: Clinically definite multiple sclerosis
CHAMPS	: Controlled high risk subjects avonex multiple sclerosis prevention study
CIS	: Clinically isolated syndrome
CMV	: Cytomegalo virus
CNS	: Central nervous system
CRMP5	: Collapsin response mediator protein-5
CSF	: Cerebrospinal fluid
DMD	: Disease modifying drug
DMF	: Dimethyl fumarate
DMTs	: Disease modifying therap
DUMP	: Diffuse uveal melanocytes proliferation
EAE	: Experimental autoimmune encephalomyelitis
EBV	: Epstein bar virus
ECG	: Electrocardiography
EDSS	: Expanded disability status scale
EFNS	: European Federation of Neurological Societies
ETOMS	: Early Treatment of Multiple Sclerosis
FLAIR	: . Fluid-attenuated inversion recovery
GA	: Glatiramer acetate
GWAS	: Genome wide association studies
HIV	: Human immunodeficiency virus
IFNB	: Interferon
JCV	: JC polyomavirus
LP	: Lumbar puncture
MAR	: Melanoma associated retinopathy
MRI	: Magnetic resonance imaging
NAION	: Nonarteritic anterior ischemic optic neuropathy
NICE	: National Institute for Health and Clinical Excellence

NMO	: Neuromyelitis optica
NTZ	: Natalizumab
ONTT	: Optic neuritis treatment trial
PML	: Progressive multifocal leukoencephalopathy
PPMS	: Primary progressive multiple sclerosis
PRMS	: Progressive relapsing multiple sclerosis
RAPD	: Relative afferent papillary defect
RIS	: Radiologically isolated syndrome
RRMS	: Relapsing remitting multiple sclerosis
SPMS	: Secondary progressive multiple sclerosis
VCAM	: Vascular cell adhesion molecule 1
WHO	: World health organization

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Abstract

In multiple sclerosis (MS), the immune system attacks and destroys the fatty myelin coating that surrounds and insulates nerve cells in a process known as demyelination. MS is a lifelong condition, and common symptoms include fatigue, muscle spasms, walking difficulties, or numbness and tingling of the face, body, arms and legs. These symptoms can worsen with time, affecting daily activities and reducing a person's quality of life. The disease is highly variable, and some people are affected more than others upon and after diagnosis. Treatments are available to help manage a number of symptoms. Life expectancy for people with MS has increased considerably in the last 20 to 25 years. On average, however, a person with MS can expect to live seven fewer years than someone without this disease. According to the National MS Society, on average, an MS patient lives about seven fewer years than someone in the general public, largely because of disease complications or other medical conditions, like cardiovascular disease. Only rarely does the disease progress so quickly that it is deadly. Due to advances in treatments, care, and lifestyle adjustments, MS often progresses slowly. Many studies show that, nowadays, about two-thirds of all patients retain a fair degree of mobility — the ability to walk, although likely with an assisted device — some 20 years after being diagnosed. Assisted devices can range from supports to aid in walking, to scooters used on occasion to save energy and avoid fatigue.

The course of the disease depends on each patient's risk factors, like having a family member with MS, cigarette smoking, and vitamin D sunlight exposure. And, among African-Americans, the disease tends to be a more progressive form and progression can be quicker.

MS prognosis is thought to be better for people with relapsing-remitting MS than for those with progressive forms of MS, likely because of a better response to disease-modifying therapies.

INTRODUCTION

Multiple sclerosis (MS) is an inflammatory demyelinating and neurodegenerative disease affecting more than 3 million people worldwide ***(Heydarpour, 2015).***

Multiple sclerosis is a relatively common disease in Europe, the United States, Canada, New Zealand, and parts of Australia. Incidence is low in childhood, increases rapidly after the age of 18 reaches a peak between 25 and 35 years (about 2 years earlier in women than men) and then slowly declines, becoming rare at the age of 50 and older. The female-to-male ratios are between 1. 5 and 2. 5 in most populations ***(Koch-Henriksen and Hyllested, 1988).*** Middle Eastern and North African countries are located in a low- to moderate-risk zone for MS based on the 2013 MS Atlas ***(Browne et al., 2014).*** A community-based survey in Al Quseir, Egypt, has found an MS prevalence of 13. 74/100,000 ***(Tallawy et al., 2013).***

Multiple sclerosis is a debilitating autoimmune disease of the central nervous system that results in chronic disability for the majority of those affected ***(Compston and Coles, 2008).*** It is a leading cause of non-traumatic disability in young adults in many countries ***(Heydarpour, 2015).***

The disease has an important impact on the health economy of many countries ***(Trisolini et al., 2010),*** since current treatment regimens are costly and have adverse side-effect profiles and/or limited efficacy ***(Hartung et al., 2015).***

Four MS clinical courses are recognized: relapsing remitting (RR), secondary progressive (SP), primary progressive (PP), and progressive relapsing (PR). CIS is recognized as the first clinical presentation of a disease that shows characteristics of inflammatory demyelination that could be MS, but has yet to fulfill criteria of dissemination in time ***(Lublin et al., 2014).***

In patients with the relapsing– remitting phase of the disease the disease begins with acute episodes of neurologic dysfunction, followed by periods of partial or complete remission with clinical stability between relapses ***(Lublin and Reingold, 1996).*** SPMS is diagnosed retrospectively by a history of gradual worsening after an initial relapsing disease course, with or without acute exacerbations during the progressive course. PPMS is a part of the spectrum of progressive MS phenotypes with absence of exacerbations prior to clinical progression ***(Lublin et al., 2014).***

Multiple sclerosis is characterized by multi-centric inflammation and demyelination of the central nervous system, but the role of axonal injury and gliosis increases as the disease evolves ***(Trapp et al., 1998).***

MS is believed to be an autoimmune disease because inflammatory infiltrates of the CNS contain T and B lymphocytes ***(Esiri and Gay. 1997).***

The initiation of disease-modifying therapy (DMT) early in the course of MS may improve the prognosis for patients with MS and reduce the occurrence of neurological damage ***(Kappos and Polman., 2006 and Kita et al., 2011).***

Delay often occur before a person with symptoms suggestive of MS sees a neurologist. Campaigns to raise awareness of MS are needed, as are initiatives to improve access to MS healthcare professionals and services ***(Giovannoni, 2016).***

However, there are a number of barriers to implementing early MS treatment. Early diagnosis and treatment of MS can be hindered because patients may delay consulting a physician about their neurological symptoms may be reluctant to start DMT ***(Ross and Thrower., 2010 and Kingwell et a l., 2010).***

In a pan European survey, performed by the EMSP (European MS platform) on a large number of European people with MS, It took more than 1 year from symptom

onset to be diagnosed with MS in the majority of respondents(>70%). The average time to diagnosis was over 8 years ***(Marri et al., 2009).***

AIM OF THE WORK

The goal of this work is to determine the causes of delayed diagnosis and treatment of multiple sclerosis patients in NASR CITY HEALTH INSURANCE hospital in order to shorten the time to diagnosis and improve the prognosis of patients with MS and reduce the occurrence of neurological disability.

EPIDEMIOLOGY AND PATHOGENESIS OF MULTIPLE SCLEROSIS

Multiple Sclerosis (MS), is a chronic disease of the central nervous system (CNS) characterized by loss of motor and sensory function, that results from immune-mediated inflammation, demyelination and subsequent axonal damage ***(Frohman et al., 2006).***

The prevalence of the disease varies in different regions of the globe, ranging from 15/100,000, to 250/100,000 ***(Kingwell et al., 2013).***

According to WHO, it is estimated that more than two million people worldwide suffer from MS and the disease is one of the most common causes of neurological disability in young adults ***(Frohman et al., 2006).***

The epidemiology of multiple sclerosis (MS) is rapidly changing in many parts of the world. Based on the Kurtzke classification, the Arabian Gulf Region is located in a low-risk zone for MS; however, recent studies suggest a moderate-to-high prevalence nearby (31–55 MS per 10,0000 individuals), with an increase in incidence in recent years. The relapsing-remitting disease course ratio is 2. 5:1 versus the primary progressive type. In a geographic area that was previously associated with low prevalence; the recent high prevalence and fast rising incidence of MS in the gulf countries, encouraged the neurologists of this region to meet in a consensus panel, in order to share our