Rev Med Hosp Gen Méx. 2016;79(3):136–143

REVISTA MÉDICA DEL
HOSPITAL GENERAL
DE MÉXICO
www.elsevier.es/hgmx

ORIGINAL ARTICLE

Prevalence of sleep disorders, daytime sleepiness and clinical symptomatology in older adults

M.Á. Mendoza-Meléndez[a,b,*], **U. Jimenez-Correa**[c], **A. Gallegos-Cari**[a], **F. Ayala-Guerrero**[d], **A. Jiménez-Anguiano**[a,b]

[a] *Área de Neurociencias, Departamento de Biología de la Reproducción, Universidad Autónoma Metropolitana-Iztapalapa (UAM-I), 09340 Mexico City, Mexico*
[b] *Programa de Doctorado en Ciencias Biológicas y de la Salud, Universidad Autónoma Metropolitana-Iztapalapa (UAM-I), 09340, Mexico City, Mexico*
[c] *Clínica de Trastornos de Sueño, División de Investigación, Facultad de Medicina, Universidad Nacional Autónoma de México (UNAM), Mexico City, Mexico*
[d] *Laboratorio de Neurociencias, Facultad de Psicología, Universidad Nacional Autónoma de México (UNAM), Mexico City, Mexico*

Received 18 March 2016; accepted 17 May 2016
Available online 21 June 2016

KEYWORDS
Elderly;
Obstructive sleep apnoea;
Epidemiology;
Sleep medicine;
Polysomnography;
REM latency

Abstract
Introduction: With ageing, changes occur that affect the quality and quantity of sleep. These changes could cause sleep disorders in older adults, causing severe consequences for health and quality of life. However, in Mexico there are no studies addressing the prevalence of sleep disorders in older adults.
Objective: To determine the prevalence of sleep disorders, daytime sleepiness and clinical symptomatology in older adults seen at the UNAM Sleep Disorder Clinic in the General Hospital of México.
Materials and methods: A retrospective analysis of 191 medical records and 148 polysomnographic records from adults over 65 years old who were seen at the UNAM School of Medicine Sleep Disorder Clinic from 2009 to 2013 was performed.
Results: 82.2% of patients were diagnosed with Obstructive Sleep Apnoea Syndrome (OSAS). The associated factors found were night-time awakenings (89%), medical comorbidities (84.5%), difficulty waking (70.7%), being overweight or obese (69.1%), among others. Of the total sleep time, they spent 14.2% in N1, 53.8% in N2, 16.1% in N3 and 15.4% in REM. Moreover, a REM sleep latency of 160 min was found.
Discussion: Caring for the elderly is a challenge for healthcare systems. The study of sleep disorders is important because of its effects on health and quality of life, so understanding the

* Corresponding author at: Área de Neurociencias, Departamento Biología de la Reproducción, Universidad Autónoma Metropolitana-Iztapalapa, Av. San Rafael Atlixco No. 186, Col. Vicentina, C.P. 09340, Delegación Iztapalapa, Mexico City, Mexico.
E-mail addresses: mmendozam@xanum.uam.mx, miguelangelmag@hotmail.com (M.Á. Mendoza-Meléndez), aja@xanum.uam.mx (A. Jiménez-Anguiano).

http://dx.doi.org/10.1016/j.hgmx.2016.05.021

clinical characteristics of this population will improve the diagnosis, management and referral of these patients.

PALABRAS CLAVE
Adulto mayor;
Apnea obstructiva de sueño;
Epidemiologia;
Medicina de sueño;
Polisomnografía;
Latencia MOR

Prevalencia de trastornos de sueño, somnolencia diurna y sintomatología clínica en adultos mayores

Resumen
Introducción: Con el envejecimiento, ocurren cambios que afectan la calidad y cantidad de sueño, pudiendo generar trastornos de sueño en adultos mayores, los cuales tienen severas consecuencias para la salud y calidad de vida. Sin embargo, en México no existen estudios que aborden la prevalencia de trastornos de sueño en adultos mayores.
Objetivo: Determinar la prevalencia de trastornos de sueño, somnolencia diurna y sintomatología clínica en adultos mayores que acuden a la Clínica de Trastornos de Sueño de la UNAM en el Hospital General de México.
Materiales y métodos: Se realizó un análisis retrospectivo de 191 expedientes clínicos y 148 registros polisomnográficos de adultos mayores de 65 años que acudieron a la Clínica de Trastornos de Sueño, de la Facultad de Medicina de la UNAM del 2009 a 2013.
Resultados: El 82.2% de los pacientes fueron diagnosticados con Síndrome de Apnea Obstructiva del Sueño (SAOS). Los factores asociados encontrados fueron despertares nocturnos (89%), comorbilidades médicas (84.5%), dificultad para despertar (70.7%), sobrepeso u obesidad (69.1%), entre otros. Del tiempo total de sueño, pasan 14.2% en N1, 53.8% en N2, 16.1% en N3 y 15.4% en MOR, además, se encontró una latencia a sueño MOR de 160 min.
Discusión: La atención del adulto mayor es un reto para los sistemas de salud. El estudio de los trastornos de sueño es importante por los efectos que producen en la salud y calidad de vida, por lo que comprender las características clínicas de esta población permitirá mejorar el diagnóstico, manejo y referencia de estos pacientes.

Introduction

Sleep is an active state during which biochemical, hormonal, and metabolic changes which are necessary for the body to work properly take place.[1] As we age, changes occur that affect the quantity and quality of sleep, such as a decrease in the efficiency and total sleep time, increase in superficial sleep (stages 1 and 2 of NREM sleep),[2] as well as a decreases in the slow-wave and REM sleep duration. Changes also occur in the density of the sleep spindles and sleep fragmentation.[3]

Physiologically, the age-related changes cause variations in the sleep–wake cycle,[4] which is regulated by two basic mechanisms: the circadian cycles and homeostatic processes. The suprachiasmatic nucleus (SCN) of the anterior hypothalamus regulates important homeostatic rhythms such as the sleep–wake cycle and cortisol and melatonin levels, among others.[5]

Sleep architecture in the elderly includes a decrease in the amplitude of the sleep–wake circadian rhythm (phase advance) and a tendency for that rhythm to become desynchronised internally, which is associated with a decrease in body temperature and decreased melatonin production[6] caused by the decrease in SCN neurons.[7,8]

During ageing, variations are seen in the sleep-related cholinergic and serotonergic pathways,[9] causing the number of neurons in the amygdala, hippocampus, basal ganglia, locus coeruleus, and grey matter to decrease. In turn, the risk of cerebral bleeding, the number of interneuron connections, and reflexes are reduced.[10,11] Likewise, the levels of acetylcholine secreted in the basal nucleus region, laterodorsal tegmental nucleus, and pedunculopontine nucleus in the brain stem and histamine in the mammillary tubercle of the hypothalamus degenerate, which in turn has repercussions on the sleep architecture.[12]

The changes in sleep architecture in the elderly are usually the result of an incapacity to maintain continuity of sleep.[13] Medical conditions, stress, consumption of psychoactive substances such as alcohol and benzodiazepines, changes in routine, and a sedentary lifestyle, among many others, can result in sleep disorders.[14,15]

It has been described that sleep disorders in the elderly are common, along with self-medication with sleeping pills, which makes these cases difficult to detect.[16] Sleep disorders in the elderly can have different origins,