

Multiple Sclerosis Related Headaches

Thesis

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Of Master Degree in Neuropsychiatry**

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

(قَالُوا سُبْحَانَكَ لَا
عِلْمَ لَنَا إِلَّا مَا
عَلَّمْتَنَا إِنَّكَ أَنْتَ
الْعَلِيمُ الْحَكِيمُ)

(البقرة: ٣٢)

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Abstract

Multiple sclerosis is a chronic disease that begins most commonly in young adults .MS lesions can occur in many different parts of the CNS, so they can cause a wide variety of symptoms and signs. Headache is a wide spread problem representing one of the ten most common symptoms in general medical practices Headache is considered as a one of pain syndromes associated with multiple sclerosis. The aim of this work was to study the association between MS and headache and to evaluate the correlation between headache (in general and its different types), the clinical features of MS and MRI lesion. This study conducted on 93 patients with definite MS. Patients were evaluated clinically using rating scales: EDSS, FSS, BDI, and headache intensity scale. We found that the headache is a common symptom in MS patients, Migraine headache may represent as an MS attack. The presence of MS plaques in the infratentorial region is associated with an increase in the headache occurrence with migraine characteristic.

(Key words: Multiple sclerosis and headache)

LIST OF ABBREVIATIONS

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Ach	Acetyl choline
ADC	Apparent diffusion coefficient
ADEM	Acute demyelinating encephalomyelitis
AI	Ambulation index
APP	Avian pancreatic polypeptide
ATP	Adenosine-5- triphosphate
BBB	Blood-brain barrier
BDI	Beck depression inventory
BDNF	Brain derived neurotrophic factor.
CAMBS	Cambridge multiple sclerosis basic score
CCR2	Chemokine receptor 2
CCR5	Chemokine receptor 5
CD MS	Clinically definite MS
CFIDS	Chronic Fatigue Immune Dysfunction Syndrome
CGRP	Calcitonin gene related peptide
Cho	Choline
CIS	Clinically isolated syndromes
CNS	Central nervous system
CNTF	Ciliary neurotrophic factor
Cr	Creatin
CSD	Cortical spreading depression
CSE	Conventional spin echo

LIST OF ABBREVIATIONS

CSF	Cerebrospinal fluid
CTTH	Chronic type headache
DA	Dopamine
DRN	Dorsal raphi nucleus
DT	Diffusion tensor
DW	Diffusion weighted imaging
EDRF	Endothelial derived relaxing factors
EDSS	Expanded disability scale
EJV	External jugular vein
ES2	Exteroceptive suppression 2
ETTH	Episodic type headache
FA	Fractional anisotrophy
Fas L	Fas ligand
FHM	Familial hemiplegic migraine
FIM	Functional Independence Measure
FLAIR	Fluid attenuated inversional recovery
FMRI	Functional magnetic resonance imaging
FSS	Fatigue severity scale
GA	Glatiramer acetate
GABA	Gama-amino butyric acid
Gd	Gadolinium
⁶⁸ Gd-EDTA	Gadolinium Ethylenediamineteraacetic acid
GNDS	Guy Neurological Disability Scale

LIST OF ABBREVIATIONS

HDRS	Hamilton Depression Rating Scale
HLA	human leukocytic antigen
5HT	5-hydroxy tryptamine
ICAM-1	Intracellular adhesion molecule-1
ICH-II	International headache society for headache classification
IFN β	Interferon-beta
IgA,	Immunoglobulin A
IgD	Immunoglobulin D
IgG	Immunoglobulin G
IgG index	Immunoglobulin G index
IgM	Immunoglobulin M
IL	Interleukin
LC	Locus ceruleus
LSD MS	Laboratory-supported definite MS
MAG	Myelin glycoprotein,
MBP	Myelin basic protein
MD	Mean diffusivity
MELAS	Mitochondrial encephalopathy, lactic acidosis, and strokes
MHC	Major histo- compitability complex
MHC	Major histocompatibility
mm	millimeters
MMP-9	Matrix metalloproteinase 9
MOG	Myelin oligodendrocyte glycoprotein

LIST OF ABBREVIATIONS

MRS	Magnetic resonance spectroscopy
MS	Multiple Sclerosis
MSFC	MS Functional Composite
MT	Magnetization transfer
MTR	Magnetization transfer ratio
NA	Noradrenaline
NAA	N-acetyl aspartate
NAWM	Normal appearing white matter
NDPH	New daily-persistent headache
NK	Natural killer cells
NKA	Neurokinin A
NK _{IR}	Neurokinin IR
NMDA	N-methyl-D-aspartate
NMO	Neuromyelitis optica
NO	Nitric oxide
NOGO	Neurite outgrowth inhibitor
NPY	Neuropeptide Y
NSAIDs	Non steroidal anti-inflammatory drugs
NSE	Neural-specific enolase
OCBs	Oligoclonal bands
PAG	periaqueductal gray matter
PASAT	Paced serial Addition Test
PD	proton density

LIST OF ABBREVIATIONS

PET	Positron emission tomography
PPMS	Primary-Progressive MS
PRMS	Progressive-Relapsing MS
rCBF	regional cerebral blood flow
RR-MS	relapsing remitting MS
SLE	Systemic Lupus Erythromatosis
SNRS	Scripps Neurological Rating Scale
SP	Substance P
SPECT	Single Photon Emission Computerized Tomography
SPMS	Secondary-Progressive MS
SSEPs	Somatosensory-evoked potentials
SUNCT	Short-lasting unilateral neuralgiform headache attacks
.	with conjunctival injection and tearing
TAC's	Trigeminal autonomic cephalgia's
^{99m} Tc-HMPAO	Technectium 99m Hexa Methyl Propylene Amine Oxime)
TE	Echo time
TH	T-helper
TN	Trigeminal neuralgia
TNFR	Tumor necrosis factor receptor
TPMS	Transitional progressive MS
TR	Repetition time
TTH	Tension-type headache

LIST OF ABBREVIATIONS

VCAM-1	Vascular-cellular adhesion molecule-1
VIP	Vasoactive intestinal peptide
VLA-4	Very late antigen-4
VEP	Visual-evoked potential

List of Tables

Table (1): Pain syndromes associated with MS	8
Table (2): Comparison of MRI criteria for diagnosis of multiple sclerosis	22
Table (3): Benign multiple sclerosis features	36
Table (4): Prognostic indicators in multiple sclerosis	37
Table (5): Clinically isolated syndromes	39
Table (6): Diagnostic Laboratory tests for Multiple Sclerosis	42
Table (7): histopathological patterns in MS	59
Table (8): Summary of the mechanisms causing progressive pathology in MS	74
Table (9): Potential role of biomarkers in pathogenesis of MS	80
Table (10): The patient groups	154
Table (11): Age of patients of the total number of patients and patients in the group I & II	155
Table (12): Sex distribution of total number of patients and patients in the group I & II	155
Table (13): The duration of illness of the total number of patients and patients in the group I & II	157
Table (14): Course of multiple sclerosis among all patients and patients in the group I & II	157
Table (15): Age of MS onset of the total number of patients and patients in group the I & II	159
Table (16): The number of MS attacks of total number of patients and patients in the groups I & II.	159
Table (17): Primary headaches versus newly developed headaches	160
Table (18): Primary headache patients	161
Table (19): Newly developed headaches (secondary headaches)	161
Table (20): Comparison study between Primary headaches and newly developed headaches (secondary headache).	162
Table (21): Comparison study between group Ia and group Ib	164
Table (22): The site of MS related headache	165
Table (23): The frequency of headache attacks in the group Ia&Ib	165
Table(24): The duration of headache attack in the group Ia & Ib	166

List of Tables

Table (25a): headache severity scale (HSS) scores among patients of group Ia & Ib.	167
Table (25b): The frequency of HSS scores among patients of the group Ia & Ib	167
Table (26): HSS in primary and secondary headache patients	167
Table (27): EDSS scores of the total number of patients and of patients in the group I and II	168
Table (28): Comparison study of EDSS scores in the groups (Ia, Ib, II).	170
Table (29): EDSS scores in primary and secondary headache patients	170
Table (30): The frequency of functional system affection in the total number of patients and in the group I&II	171
Table (31): Comparison study of functional systems affected in the groups Ia,Ib,II	172
Table (32): FSS scores of total number of patients and patients in the group I&II	174
Table (33): Comparison study of FSS scores in the groups Ia,Ib,II	175
Table (34): FSS scores in primary and secondary headache patients	176
Table (35): Comparison study of BDI scores in the group I&II	177
Table (36): Comparison study of BDI scores in the groups Ia,Ib,II.	178
Table (37): BDI scores in the primary and secondary headache patients	179
Table (38): Comparison study of lesion location in MRI in the group I & II	181
Table (39a): Comparison study of the affection of the Midbrain in the groups Ia,Ib,II.	182
Table (39b): Comparison study of the affection of the cerebellum in the groups Ia,Ib,II.	182
Table (39c): Comparison study of the affection of the temporal lobe in the groups Ia,Ib,II	182
Table (40): Comparison study of lesion location in MRI in the groups Ia,Ib,II	183
Table (41): Number of regions affected by MS plaques in MRI of patients in groups I & II	184
Table (42): Comparison study of number of lesion locations in the brain MRI of patients in the groups Ia,Ib,II.	185
Table (43): Comparison study of number of lesion locations in the brain and spine MRI of patients in the groups Ia,Ib,II	185

List of Tables

Table (44): Number of MS plaques in MRI of patients in the group I & II	186
Table (45a): Number of MS plaques in the brain MRI of patients in the the groups Ia,Ib,II.	186
Table (45b): Number of MS plaques in the brain & spine MRI of patients in the the groups Ia,Ib,II.	187

List of figures

List of figures

Figure (1): Relatively specific sign of MS. Plaques through corpus callosum, arranged at right angles along venules Dawson finger	21
Figure (2): RR MS with partial recovery	33
Figure (3): RR MS with complete recovery	33
Figure (4): PP MS without Plateaus	33
Figure (5) : PP MS with temporary minor improvements	33
Figure (6): Secondary progressive (SP)	34
Figure (7) Progressive-relapsing (PR) MS	35
Figure (8): the role of immune system in MS pathogenesis	68
Figure (9): the impact of cytokines on oligodendrocytes and demyelination in MS	69
Figure (10) Sex distribution in total number of patients	156
Figure (11) Sex distribution in both group I&II	156
Figure (12) Course of MS among all patients	157
Figure (13) Course of MS in both group I&II	157
Figure (14) HSS scores of patients in the group Ia & Ib	167
Figure (15): EDSS scores among all patients	169
Figure (16): Percentage of EDSS scores in the group I & II	169

List of figures

Figure (17): Percentage of EDSS scores in the groups (Ia, Ib, II)	170
Figure (18): The functional system affection in the groups Ia,Ib,II	173
Figure (19) FSS scores among all patients	174
Figure (20) FSS scores in the groups I and II	174
Figure (21) FSS scores of patients in the groups Ia,Ib,II	175
Figure (22) BDI scores among all patients	177
Figure (23) BDI scores of the total number of patients and in the group I &II	177
Figure (24) BDI scores of patients in the groups Ia,Ib,II	178
Figure (25): MRI of the case (A)	263
Figure (26): MRI of the case (B)	264
Figure (27): MRI of the case (C)	265
Figure (28): MRI of the case (D)	266