Effective risk factors in Development of multiple sclerosis disease in Kermanshah

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ABSTRACT

Background and purpose: Multiple sclerosis (MS) is a common Inflammatory demyelinating disease in central nervous system. So many genetically and environmental factors are involved in forming it. This study has been done in purpose of checking Effective risk factors in Development of multiple sclerosis in Kermanshah. Materials and methods: Current study is an analytical from kind of Case-control study. For doing this, 80 patients with MS and 80 patients without it which were assimilated for age and gender with case group, have been studied. Data gathering tools was self-made questionnaire including demographic features questionnaire and disease risk factors that its validity had been confirmed by Content validity and reliability of Cronbach's alpha test. Obtained data has been analyzed by SPSS 18 and through Descriptive and inferential statistics. Findings: History of accident and trauma to the head and back (p=0.077), history of poultry contact (p=0.07), lack of sunbathing (p=0.151), The menarche age (p=0.01) and having multiple sclerosis in other family members (p=0.000) can increase risk of M.S. Discussion and conclusion: Based on findings, History of accident and trauma to the head and back, history of poultry contact, lack of sunbathing, the menarche age, having multiple sclerosis in other family members and being third child are considered as effective risk factors of disease.

Keywords: Multiple sclerosis, Risk Factors, Disease development
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INTRODUCTION

Multiple Sclerosis Disease (MSD) is an effect depended to central nervous system that is one of most debilitating neurologic disease in mature teens and its more common in people with 20-40 years old [1, 2]. MSD in women is 2-3 times more than men [3]. Based on WHO report in 2008, about 1/3 million were having it in all over the world [4]. The prevalence rate in Kermanshah City was 43.3 in 100000 person including 65.6 for females and 21.9 for males [5]. Chance of revealing disease in siblings having M.S. is 2.6%, in in parents is 1.8% and in children is 1.5% [6, 7]. Although there's no evidence on knowing stress as Causing or aggravating factor of multiple sclerosis but having a spontaneous chronic disease causes stress [8]. There must be more survey on etiologic, driving and resonator factors of this disease more than ever by considering young people and effective forces of society involvement and to produce enormous physical, psychological and economic injuries as a burden on families, hospital and government and increase in spending years with disabilities. Despite the growing prevalence and the incidence of the disease in Iran, effective epidemiological risk factors on incidence and growth of disease aren't specified completely and by considering studies results, MSD prevalence in Kermanshah is high so this study has been done in purpose of checking effective risk factors Effective risk factors in Development of multiple sclerosis in Kermanshah.

MATERIALS AND METHODS

Current study is an analytical from kind of Case-control study, which has been done in a three month interval from Ordibehesht until Tir of 1394. In this 160 cases have been studied including 80 patients having M.S. that have been confirmed by Evaluation of diagnostic assistance results like MRI and Confirmation of the Expert Committee and using definite diagnosis criterion of MSD that is approved by neurologist, and 80 people of controls that has been assimilated by case group from age and gender.

Controls were none- MS patients (for removing Recall bias no Healthy people was used) that during of interview, disease features and demographic information of participants self-made questionnaire that its validity had been confirmed by Content validity and reliability of Cronbach's alpha test, had been registered and then info was interred in SPSS18 software and results were analyzed in frequency, relative frequency and Summarized contingency tables and with statistical independent T test, Chi-squared test and data Logistic regression. Two groups have been chosen from assimilated age and gender variables (with no meaningful based on independent T and chi square statistical tests).

RESULTS

80 patients having MS have been placed in case group and 80 none- MS patients were placed as controls. In both cases and controls, men and women count considered equally 40. Average age in patients having MS was 34.61±8.70, and in Non-MS Patients was 34.23±10.33 (p=0.798). Table 1 shows frequency percentage of each demographic variable for MS having patients and Non-MS Patients.

In case group, percentage of people with high education was more than controls, and it might be due to more stress of these people (26% against 10%). Counts of MS having people were more in higher birthing degree. About 11% of MS having people, there was disease observation in one of family members. From history of poultry contact between case and controls no meaningful difference was found (p=0.07). Canned food consumption history has no effect on MS and in Non-MS Patients, this consumption was more; also sun exposure rate history and migration records had no connection with MS. Head and vertebral column trauma in MS having patients was more than non-MS patients. Considering obtained results, blood pressure and headache can't have any relationship whit MS, because percentage of patients whit high blood pressure and headache in MS having patients was less than Non-MS Patients.

In patients with MS, no connection was found about inflammatory rheumatic diseases and MSD. Inflammatory bowel diseases (IBD) history was more in patients having MS. Infectious diseases history cause to hospitalization before age of 20 wasn't related to MS. MSD has a meaningful connection with smoking, alcohol and stress background but this connection was weak to opium consumption (p=0.096), and it hasn't been related to recent gestation.

DISCUSSIONAND CONCLUSION

General goal of this study was to determine effective risk factors in Development of multiple sclerosis in Kermanshah. In this study 80 people interred MS patients of case group and 80 were interred Non-MS Patients of controls. In both cases and controls, men and women count considered equally 40. Average age in patients having MS was 34.61±8.70, and in Non-MS Patients was 34.23±10.33 (p=0.798). In case group, percentage of people with high education was more than controls, and it might be due to more stress of these people. Counts of MS having people were more in higher birthing degree. About 11% of MS having people, there was disease observation in one of family members. MSD has a meaningful connection with smoking, alcohol and stress background but this connection was weak to opium consumption (p=0.096), and it hasn't been related to recent gestation.

Abedini and et al (1386) in approved MS patients' study (852people, 161 men and 421 women) concluded that average age of patients is 34/3±9/4 and ratio of women to men was 2.6. Patients' average age is close to current study average age approximately [2]. SamanNejad and et al in a research figured out the prevalence rate in Kermanshah City was 43.3 in 100000 person including 65.6 for females and 21.9 for males. Incidence average age was 30.8 years old and in age of 30-34, there were more patients (20.1%). 2.1% in First degree relatives had disease history. Considering this information and previous studies associated to majority of women patients in this disease, we chose groups in this study gender assimilated. In current study, factors like birthing degree, history of smoking, opium and alcohol consumption had a meaningful connection with disease.

Based on our study results, blood pressure and headache can't have any relationship whit MS, because percentage of patients whit high blood pressure and headache in MS having patients was less than Non-MS Patients. Inflammatory bowel diseases (IBD) history was more in patients having MS. Infectious diseases history cause to hospitalization before age of 20 wasn't related to MS. Mehri and et al (1393) found out History of accident and trauma to the head and back, history of poultry contact, lack of sunbathing, the menarche age, having multiple sclerosis in other family members and being third child cause to increase danger of MSD.

From history of poultry contact between case and controls no meaningful difference was found. Head and vertebral column trauma in MS having patients was more than Non-MS Patients. Saheb Al-Zamani and et al in a research found out that history of accident and trauma to the head and back, history of poultry contact, lack of sunbathing, the menarche age, having multiple sclerosis in other family members and being third child are considered as effective risk factors of disease. In these studies some results agreed and some disagreed results in our study which requires Registration of more extensive information and more survey on patients.

Table 1. Number (percentage) of MSD patients and controls patients based on demographic features

Variables		Num. / (percentage)				p-value
		Case		Controls		
Educational level	Illiterate	5	4	1.3	1	P=0.022 OR=0.74
	Infra high school diploma	22.5	18	30	24	
	High school diploma	46.3	37	85.8	47	
	B.A. and higher	26.3	21	10	8	
Birthing degree	1st	7.9	12	11.3	17	P=0.002 OR=0.74
	2nd	23.8	16	10.6	16	
	3rd or higher	29.1	44	17.2	26	
Occupational situation	Employee	4.6	7	18.3	28	P=0.000 OR=0.365
	Self-employed	12.4	19	17	26	
	Unemployed	31.4	48	16.3	25	
Type of job	Shift job	2.4	2	19.3	16	P=0.548 OR=0.614
	Non-shift job	13.3	11	65.1	54	
MSD history in family	Yes	10.6	17	0	0	P=0.000 OR=20514
	No	39.4	63	50	80	
Average Menarche age		13.1±1.4		12.5±0.9		P=0.01

Table 2. Numbers (percentage) of MSD patients and controls patients based on environmental risk factors

Variables		numbers / percentage				p-value
		Cases		Controls		
Poultry contact history	Yes	6.3	10	11.9	19	P=0.07
	No	43.4	69	38.4	61	
Canned food consumption history	Yes	18.1	29	40.6	65	P=0.000
	No	31.9	51	9.4	15	
Sun exposure history	Low	12.6	20	6.9	11	P=0.151
	Medium	30.2	48	33.3	53	
	High	6.9	11	10.1	16	
Migration history	Yes	10.8	17	38.6	6	P=0.934
	No	10.8	17	39.9	6	
Accident and trauma to head and back History	Yes	10	16	5	8	P=0.077
	No	40	64	45	72	

Table 3. Numbers (percentage) of MSD patients and controls patients based on basic diseases

Variables		numbers / percentage				p-value
		Cases		Controls		
Blood pressure history	Yes	3.1	5	7.5	12	P=0.073
	No	46.9	75	42.5	68	
Headache history	Yes	22	35	40.9	65	P=0.000
	No	27.7	44	9.4	15	
Inflammatory rheumatoid disease history	Yes	0.6	1	1.9	3	P=0.305
	No	49.7	78	47.8	75	
IBD history	Yes	8.8	14	4.4	7	P=0.095
	No	40.9	65	45.9	73	
Infectious diseases history cause to hospitalization before age of 20	Yes	3.8	6	13.9	22	P=0.001
	No	46.2	73	36.1	57	

REFERENCES

[1] Ascherio A MK. Epidemiology of multiple sclerosis: from risk factors to prevention. SeminNeurol. 2008;28(1):17-28.

[2] Abedidni M HSR ZA, Farahmand M. Epidemiologic study of multiple, sclerosis in Mazandaran I, J Mazandaran Univ Med Sci. 2008; 18(66): 82-6.

[3] Greer JM MP. Role of gender in multiple sclerosis: clinical effects and potentialmolecular mechanisms J Neuroimmunol. 2011;234(1-2):7-18.

[4] World Health Organization. Mental health, Neurology Disorder: public health challenges[Online]. [cited 2011]; Available from :URL: http://www.worldmsday.org/wordpress/wpcontent/ uploads/2013/05/MS_v10.pdf.

[5] Saeedi M. study of important risk factors for the development of multiple sclerosis in patients that admitted to allavi hospital of Ardabil. 11th international ms congress, oct 23-24, Olympic Hotel,Tehran,Iran 2013.

[6] Fauci AS, Braunwalld E, Kasper Dl, Hauser S, Longo DL, Jameson JL. Harrison, s internal medicin. 17th ed. New York McGraw-Hill, 2008: 2610-25.

[7] Hernán MA, Alonso A, Hernández DS. Tetanus vaccination and risk of multiple sclerosis: a systematic review. Neurology. 2006 Jul; 67(2): 212-15.

[8] Bradley WG, Daroff RB, Fenichel GM, Jankovic J. Neurology in clinical practice, 5th ed. Philadelphia PA: Butterworth-Heinemann, 2008; 1583-1613.