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ARAŞTIRMA YAZISI / ORIGINAL ARTICLE

Use of Cigarette and Maras Powder in Our İschemic Stroke Patients

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ABSTRACT

Purpose: The aim of this study was to determine the frequency of maraş powder use and cigarette smoking amongst stroke patients in our region.

Patients and Methods: In this prospective study, evaluation was made of 200 patients who had been diagnosed with stroke and were being followed up in the Neurology Polyclinic of Kahramanmaraş Sütcü Imam University between December 2017 and March 2018. A record was made for each case of age, sex, personal history, family history, and risk factors (coronary artery disease, diabetes mellitus, hypertension, atrial fibrillation, hyperlipidemia, smoking status, use of maraş powder and alcohol consumption). Neurological and physical examinations were performed. The findings of routine haematological and biochemical tests, carotid-vertebral doppler ultrasonography, brain computed tomography and cranial magnetic resonance imaging were recorded.

Results: A total of 200 patients were evaluated, comprising 121 (60.5%) males and 79 (39.5%) females with a mean age of 65.2±13 years. Risk factors were determined as hypertension in 146 (73%) patients, hyperlipidemia in 86 (43%), diabetes mellitus in 61 (31%), atrial fibrillation in 44 (22%), coronary artery disease in 105 (53%), cigarette smoking in 47 (24%), maraş powder use in 34 (17%) and alcohol consumption in 7 (4%). Employing the Oxfordshire Community Stroke Project (OCSP) classification, the clinical syndrome was determined as total anterior circulation infarct in 4% of the patients, posterior circulation infarct in 21.5%, partial anterior circulation infarct in 43% and lacunar syndrome in 31.5%.

Conclusion: Cigarette smoking and the use of smokeless tobacco are the most important modifiable risk factors for stroke. The effect on stroke of cigarette smoking and the use of smokeless tobacco must be kept in mind, and public awareness and education on this topic be undertaken. Lifestyle changes to protect against stroke should be advised.

Keywords: Ischemic stroke-cigarette, maras powder

İSKEMİK İNME HASTALARIMIZDA SİGARA VE MARAŞ OTU KULLANIMI

ÖZET

Amaç: Bu çalışmada, bölgemizde inme geçiren olgularda sigara ve maraş otu kullanım alışkanlığının sıklığı incelendi.

Hastalar ve Yöntem: Bu çalışmada aralık 2017-mart 2018 tarihleri arasında Kahramanmaraş Sütçü imam Üniversitesi Tıp Fakültesi Noroloji polikliniğinde inme tanısı ile takip edilen 200 olgu prospektif olarak incelendi. Olguların yaş, cinsiyet, özgeçmiş, soygeçmiş, risk faktörleri (koroner arter hastalığı, diabetes mellitus,hipertansiyon, atriyal fibrilasyon, hiperlipidemi, sigara, maraş otu, alkol kullanımı) kaydedildi. Nörolojik ve Fizik muayeneleri yapıldı. Rutin hemogram,biyokimyasal tetkikleri, karotis-vertebral dopler ultrasonografi bulguları, bilgisayarlı beyin tomografi ve kranial manyetik rezonans bulguları kaydedildi.

Bulgular: Çalışmadaki 200 olgunun 121'i (%60.5) erkek, 79'u (%39.5) kadındı. İskemik inme geçiren 200 hastanın yaş ortalaması 65.2 ± 13 idi. Risk faktörleri; 146 (%73) hastada hipertansiyon, 86 hastada (%43) hiperlipidemi, 61 hastada (%31) diyabetes mellitus, 44 hastada (%22) atrial fibrilasyon, 105 hastada (%53) koroner arter hastalığı, 47 hastada (%24) sigara kullanımı, 34 hastada (%17) Maraş otu kullanımı, 7 hastada (%4) alkol kullanımı vardı Oxfordshire Community Stroke Project (OCSP) sınıflamasına göre klinik sendrom; %4'ünde total anterior sirkülasyon infarktı, %21.5'inde posterior sirkülasyon infarktları, %43'ü parsiyel anterior sirkülasyon infarktı ve %31.5'inde laküner sendrom olarak saptandı

Sonuç: Sigara ve dumansız tütün kullanımı, inmenin en önemli değiştirilebilir risk faktörleridir. Sigara ve dumansız tütün kullanımının inme üzerine olan etkisi akılda tutulmalı, toplum bu konuda bilgilendirilmeli, insanlara inmeden korunma için yaşam biçimi değişikliği öğütlenmelidir.

Anahtar sözcükler: İskemik inme, sigara, maraş otu

Stroke leads to major disability and is one of the most important causes of death worldwide. In the USA, stroke is the third-ranking cause of death. The risk factors for stroke can be classified as those which cannot be changed, such as age, gender, race and familial history, and those which can be changed, such as hypertension, diabetes mellitus, heart diseases, smoking, alcohol consumption, hyperlipidemia, obesity and nutritional habits. The risk factors which can be changed include some factors which are, and others not, associated with lifestyle (1,2,3). Foremost amongst the lifestyle-associated factors is cigarette smoking. Smokeless tobacco, which is a different form in which tobacco is used, also constitutes a significant risk for ischaemic stroke.

Smokeless tobacco products are used throughout the world under various names, particularly in India (gutka) and Bangladesh (bidi) in South-east Asia, and in Turkey (wild tobacco; Nicotiana rustica – maraş powder in Turkish). It is estimated that more than 300 million people globally use smokeless tobacco in more than 70 countries (4). Maraş powder, which is frequently used in the Eastern Mediterranean region of Turkey, is an important example of a smokeless tobacco (5,6). The aim of this study was to determine the frequency of maraş powder use and cigarette smoking in stroke patients in our region.

Materials and methods

In this prospective study, evaluation was made of 200 patients who had been diagnosed with stroke and were being followed up in the Neurology Polyclinic of Kahramanmaraş Sütcü Imam University between December 2017 and March 2018. Approval for the study was granted by the Ethics Committee of Kahramanmaraş Sütcü Imam University (decision no: 2017/20, dated 06.12.2017). A record was made for each case of age, sex, personal history, family history, and risk factors (coronary artery disease, diabetes mellitus, hypertension, atrial fibrillation, hyperlipidemia, smoking status, use of maraş powder and alcohol consumption). Neurological and physical examinations were performed. The findings of routine haematological and biochemical tests, carotid-vertebral doppler ultrasonography, brain computed tomography and cranial magnetic resonance imaging were recorded.

The SPSS 22.0 (IBM Corporation, Armonk, New York, USA) application was used to analyze variables. Descriptive statistics were provided as mean ± standard deviation (SD), number (n) and percentage (%) values.

Results

A total of 200 patients were evaluated, comprising 121 (60.5%) males and 79 (39.5%) females with a mean age of 65.2±13 years. Risk factors were determined as hypertension in 146 (73%) patients, hyperlipidemia in 86 (43%), diabetes mellitus in 61 (31%), atrial fibrillation in 44 (22%), coronary artery disease in 105 (53%), cigarette smoking in 47 (24%), maraş powder use in 34 (17%) and alcohol consumption in 7 (4%) (Table 1). In analysing the risk factors, it was determined that 8 (4%) patients smoked just cigarettes, 2 (1%) used just maraş powder and 2 (1%) both smoked cigarettes and used maraş powder.

In accordance with the Oxfordshire Community Stroke Project (OCSP) classification, the clinical syndrome was determined as total anterior circulation infarct in 4% of the patients, posterior circulation infarct in 21.5%, partial anterior circulation infarct in 43% and lacunar syndrome in 31.5% (Table 2). A total of 34 patients, 30 males and 4 females, were using maraş powder. In these 34 patients, total anterior circulation infarct was diagnosed in 3%, posterior circulation infarct in 21%, partial anterior circulation infarct in 41% and lacunar syndrome in 35% (Table 3).

Table 1. Vascular risk factors

Risk factor	*Total n:200*	%
Hypertension	146	73
Diabetes	61	31
Hyperlipidemia	86	43
Cigaret	47	24
Maras powder	34	17
Alchol	7	4
Atrial fibrillation	44	22
Coronary artery disease	105	53

Table 2. Clinical syndrome according to OCSP classification

	Total n:200	%
Total anterior circulation infarction	8	4
Posterior circulation infarction	43	21.5
Partial anterior circulation infarction	86	43
Lacunar syndrome	63	31.5

OCSP: Oxford shire Community Stroke Project

Table 3. Patients using Maras powder, clinical syndrome according to OCSP classification

	Total n:34	%
Total anterior circulation infarction	1	3
Posterior circulation infarction	7	21
Partial anterior circulation infarction	14	41
Lacunar syndrome	12	35

Discussion

According to the World Health Organisation, stroke is defined as a clinical syndrome characterised by the rapid development of symptoms and findings of loss of focal cerebral function without any apparent cause other than vascular reasons, and this condition causes significant personal and socio-economic losses (7,8,9). Therefore, to prevent damage arising from cerebrovascular diseases to both the individual and society, it is extremely important that risk factors in the aetiology are known and that intervention is undertaken to combat these risk factors (10). In recent years, studies have been conducted, primarily in Turkey, but also in other countries to identify and prevent risk factors (11). In large-scale studies that have examined virtually all the risk factors for stroke, cigarette smoking has been revealed to be a strong risk factor for ischaemic stroke (12,13,14). The formation of thrombus in vessels narrowed by smoking is viewed as the acute effect, and there is a chronic effect from increased atherosclerotic burden.

Even a single cigarette has the effect of increasing heart rate and raising the mean arterial pressure. Obstruction or embolisation within large arteries is thereby facilitated via both the atherosclerotic effect and the increased mean arterial pressure - a direct effect of cigarettes. This then directly leads to lacunar infarcts caused by atherosclerosis (15,16,17). A meta-analysis of 32 studies found that the relative risk of ischaemic stroke was 1.9-fold greater for smokers than non-smokers (18). In the current study, 24% of the patients were cigarette smokers. In 2.5% of cases, there was the risk factor of cigarette smoking plus hypertension and in 4%, the risk factor was determined to be cigarette smoking alone. In the countries of southeast Asia in particular, the use of smokeless tobacco is extremely widespread. Higher rates of use have been reported in young adults with low income and low education level. Despite the known harmful effects of smokeless tobacco, no significant reduction has been seen in its use in the last 20 years.

Maraş powder is a smokeless tobacco product and, similarly to other smokeless tobacco products, it is chewed or placed inside the lips and sucked. Due to the nicotine content, which is similar to cigarette smoking, smokeless tobacco has the effect of increasing blood pressure, heart rate and vasoconstriction through various mechanisms such as platelet activation, cellular inflammation, endothelial dysfunction, increasing atherosclerosis, insulin resistance, dyslipidemia and sympatho-adrenergic activation. Vascular pathologies, cardiac arrhythmia, ischaemic heart disease and ischaemic stroke can be caused associated with these mechanisms. Studies conducted in Sweden and the USA have demonstrated that smokeless tobacco may be a significant aetiological factor for cerebrovascular attacks (19,20,21). It has been suggested in several studies that increased triglyceride levels, which then result in obesity, diabetes and metabolic syndrome, could be related to smokeless tobacco use (22).

In the current study, atrial fibrillation was ascertained in 22% of the patients, hyperlipidemia in 43% and diabetes mellitus in 31%. The use of maraş powder was a risk factor in 17%. The use of maraş powder alone was determined in 1% of the patients and the combination of maraş powder use and cigarette smoking in 1%.

Rates of cigarette smoking and maraş powder use as found in the stroke patients involved in the current study were considerable. This rate was higher in male patients, in particular. Due to both the accelerating effect on atherosclerotic mechanisms and the pathological effects in the cardiovascular system, both smoked and smokeless tobaccos can cause cerebrovascular events in stroke patients. In addition to cigarette smoking, stroke patients should be questioned about the use of smokeless tobacco.

Conclusion

cigarette smoking and the use of smokeless tobacco are the most important modifiable risk factors for stroke. The effect on stroke of cigarette smoking and the use of smokeless tobacco must be kept in mind, and public awareness and education about lifestyle modification related to this topic should be undertaken.

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