

MİGREN VE GERİLİM TİPİ BAŞAĞRISINDA GLOKOM

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ÖZET

Migren ve glokom etiyojisinde vazospazm veya hipoperfüzyona dayalı teoriler ve bazı serilerde her iki hastalığın dikkat çekici şekilde birarada bulunması bu iki hastalığın patogenezinde ortak yolları düşündürmüştür. Bazı çalışmalarda glokom hastaları arasında normal populasyona göre istatistiksel olarak anlamlı veya anlamsız boyutlarda migren sıklığı bildirilmiştir. Bu çalışmada farklı bir şekilde migrenli veya gerilim tipi başağrılı bir grupta ve kontrol grubunda glokom sıklığını araştırmayı amaçladık.

Ardışık, başka yönlerden sağlıklı 125 migren, 106 gerilim tipi başağrısı ve yaş ve cins uyumlu, başağrısı yakınması olmayan 86 kontrol olgusu (Yaş ortalamaları sırasıyla 36.38±10.20, 37.27±15.10 ve 35.05±11.35) çalışma gruplarını oluşturdu. Tüm olgular oftalmolojik muayeneden geçirildi.

Migren, gerilim tipi başağrısı ve kontrol gruplarında sırasıyla 5.6%, 2.83% ve 2.33% glokom sıklığı tespit ettik. Grup çiftleri arasında ve genelde glokom sıklığı açısından istatistiksel olarak anlamlı bir farklılık yoktu. Şuna dikkat çekmek gerekir ki, migren tedavisinde kullanılan pek çok ilaç, örneğin ergotaminler vazokonstriksiyon yaparlar ve glokom ile migren arasında anlamlı ilişki gösteren çalışmalarda bu ilaçların yüksek glokom prevalansında rol oynayıp oynamadıkları tekrardan düşünülmelidir.

Daha geniş ve odaklanmış migren ve glokom serileri daha güvenli sonuçlar verebilir. Ergotaminler ve vazokonstriktör ilaçlarla kontrollü çalışmalar bunların özellikle düşük basınçlı glokom patogenezindeki rolünü açığa çıkarmak için faydalı olacaktır.

Anahtar Sözcükler: Migren, gerilim başağrısı, göziçi basıncı, glokom, düşük basınçlı glokom, ergotamine.

GLAUCOMA IN MIGRAINE AND TENSION TYPE HEADACHE

Various theories depending on vasospasm or hypoperfusion in migraine and glaucoma etiologies and remarkable coexistence of both diseases in some series inspire a common pathway in the pathogenesis of both diseases. Higher prevalences of migraine compared to the normal population have been reported, either significant or nonsignificant, among glaucoma patients. In this study, in a reverse style, we aimed to investigate the frequency of glaucoma in patients with migraine and tension type headache, and a control group.

Consecutive, otherwise healthy 125 patients with migraine, 106 patients with tension headache and age and sex matched 86 control subjects (mean ages: 36.38±10.20, 37.27±15.10 and 35.05±11.35 respectively) without headache complaints constituted the study groups. All subjects underwent an ophthalmological examination.

We detected glaucoma prevalences of 5.6%, 2.83% and 2.33% in migraine, tension type headache and control groups respectively. There was no statistically significant difference between group pairs and overall in respect to glaucoma prevalences. It should be pointed out that the drugs used to treat migraine produce vasoconstriction (e.g., ergotamines) and in studies that show significant correlations between glaucoma and migraine, it should be reconsidered if these drugs play a role in the high glaucoma prevalences.

Wider and focused migraine and glaucoma series may provide more reliable results. Controlled studies with ergotamines and vasoconstrictive drugs are recommended to clarify their role in particularly low tension glaucoma pathogenesis.

Keywords: Migraine, tension headache, intraocular pressure, glaucoma, low tension glaucoma, pathogenesis, ergotamine

INTRODUCTION

In recent years the general consensus has emerged that in migraine both neuronal and vascular components are relevant and most probably inter-related¹⁻³. Some studies report that vasospasm or hypoperfusion plays a role in headache formation⁴.

Optic nerve damage in Primary Open Angle Glaucoma (POAG) and Low Tension Glaucoma

(LTG) is also suggested to be due to vasospasm. Remarkable coexistence of both diseases in some series inspire a common pathway, etiology or factor in the pathogenesis of both diseases.⁵⁻¹⁰

Higher prevalences of migraine among glaucoma patients compared to the normal population are reported in some studies⁸⁻¹¹. In contrast some authors reported no significant difference between migraine prevalences in the normal population and in glaucoma patients¹²⁻¹⁴.

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Geliş Tarihi: 26.06.2002 Kabul Tarihi: 03.11.2002

Received: 26.06.2002 Accepted: 03.11.2002

In this study we aimed to investigate frequency of glaucoma in patients with migraine and tension type headache, and in a control group.

MATERIALS AND METHOD

Consecutive, otherwise healthy 125 patients with migraine and 106 patients with tension type headache diagnosed according to the International Headache Society criteria¹⁵ in our Neurology department were included in the study. Eighty-six age and sex matched patients who applied to the neurology outpatient clinics with complaints other than headache constituted the control group. Subjects with systemic disorders or under treatment that may affect intraocular pressure were excluded from control group. All subjects underwent an ophthalmological examination. The diagnosis of glaucoma was based on intraocular pressure measurement with applanation, dilated funduscopy cup/disc ratio, 30-2 threshold computerized visual field test (Humphrey Field Analyzer 750, Carl Zeiss, USA) and history. Chi-square test and one-way analysis of variance (ANOVA) were used for the statistical analysis, and the level of significance was taken as $p < 0.05$.

RESULTS

One hundred and twentyfive patients -112 women and 13 men- with neurologically confirmed diagnosis of migraine were examined. Ages of the patients were ranging between 17 and 68 (mean age 36.38 ± 10.20). Mean intraocular pressure was 14.58 ± 2.49 mmHg in the right eyes and 14.65 ± 2.62 mmHg in the left eyes. Mean cup/disk ratio was 0.22 ± 0.12 in the right eyes and 0.24 ± 0.16 in the left eyes. In the attack therapy; 8 patients were using aspirin, 24 patients were using ergotamines, 42 patients were using naproxen sodium, 17 patients were using triptan and 34 patients were using paracetamol. In migraine prophylaxis 48 patients were using tricyclic antidepressants, 8 were using pizotifene, 5 were using beta blockers and 17 were using flunarazin. Ophthalmological examination revealed POAG in 4 and LTG in 3 cases. None of those patients used vasoactive drugs. Ocular findings in all groups are shown in Table I. There was no significant difference in migrainous findings between the patients with and without glaucoma.

Table I.: Ocular findings in all groups.

Ocular Findings	Migraine (Mean \pm SD)	Tension Type Headache (Mean \pm SD)	Controls (Mean \pm SD)
IOP (R)	14.58 \pm 2.49	14.05 \pm 1.58	15.02 \pm 0.89
IOP (L)	14.65 \pm 2.62	14.65 \pm 1.66	14.34 \pm 1.22
C/D (R)	0.22 \pm 0.12	0.20 \pm 0.12	0.15 \pm 0.23
C/D (L)	0.24 \pm 0.16	0.20 \pm 0.11	0.12 \pm 0.27

IOP: Intraocular Pressure
C/D: Cup/Disk Ratio

Twelve of 106 tension type headache patients were men and 94 were women, ages ranging between 16 and 66 (mean 37.27 ± 15.10). Mean intraocular pressure was 14.05 ± 1.58 mmHg in the right eyes and 14.65 ± 1.66 mm Hg in the left eyes. Mean cup/disk ratio was 0.20 ± 0.12 in the right eyes and 0.20 ± 0.11 in the left eyes. Ophthalmic examinations revealed POAG in two cases and LTG in one case.

Eight subjects in the control group were male and 78 were female. Ages were ranging between 16-59 years (mean: 35.05 ± 11.35). Mean intraocular pressure was 15.02 ± 0.89 mm Hg in the right eyes and 14.34 ± 1.22 mm Hg in the left eyes. Mean cup/disk ratio was 0.15 ± 0.23 in the right eyes and 0.12 ± 0.27 in the left eyes. Ophthalmic examination revealed POAG in two cases. Glaucoma prevalence in all groups is summarized in Table II. No statistically significant difference was found overall (χ^2 Pt = 1.899, $p = 0.3870$). On the other hand, there was no significant difference between migraine and tension type headache ($\chi^2 = 0.4990$, $p = 0.4800$), migraine and control (χ^2 Pt = 0.6560, $p = 0.4180$), and tension type headache and control groups (χ^2 Pt = 0.0476, $p = 0.8272$).

Table II. Prevalence of glaucoma in study and control groups.

Ocular Findings	Migraine n(%)	Tension Type Headache n(%)	Controls n(%)
Glaucoma	7 (% 5.6)	3 (% 2.8)	2 (% 2.3)
Without Glaucoma	118 (% 94.4)	103 (% 97.2)	84 (% 97.7)
Total	125	106	86

Overall ($\chi^2 = 1.899$, $p = 0.3870$) (Not significant)
Migraine and tension type headache ($\chi^2 = 0.4990$, $p = 0.4800$) (Not significant)
Migraine and control ($\chi^2 = 0.6560$, $p = 0.4180$) (Not significant)
Tension type headache and control groups ($\chi^2 = 0.0476$, $p = 0.8272$) (Not significant)

DISCUSSION

Association between migraine and glaucoma is commonly studied by ophthalmologists. Therefore, usually migraine prevalence in glaucoma populations are reported in these studies. In a different manner we investigated glaucoma in a migraine and tension type headache population.

We detected glaucoma prevalences of 5.6%, 2.83% and 2.33% in migraine, tension type headache and control groups respectively. There was no statistically significant difference between group pairs and overall in respect to glaucoma prevalences.

We diagnosed 7 (5.6 %) glaucoma cases among 125 patients with migraine. This rate is above the glaucoma prevalence (1.5-2.0 %) in the general population¹⁶. Wang et al¹⁰ found migraine frequencies of 16.7 % in POAG, 11.1 % in LTG and 19.4 % in high-pressure OAG. They found a moderate statistically significant association between past history of typical migraine headache and open angle glaucoma in people aged 70 to 79 years in Blue Mountains Eye Study population, but this association was not present for older or younger age groups. On the other hand Klein et al¹² and Morgan and Drance¹³ reported that migraine prevalence in POAG is not significantly different than the normal population. Usui et al found migraine prevalence as 5.2 % in LTG, 2.8 % in POAG and 2.7 % in controls and these values didn't show significant difference¹⁴.

Corbett et al⁸ found the migraine frequency among LTG patients as 48 % and reported a significant glaucoma-migraine association in patients between 70-79 years of age. Phelps and Corbett⁹ also reported significantly higher migraine rates in LTG cases than normals and patients with high tension glaucoma. Cursiefen et al.¹¹ reported that prevalence of headache, migraine, and tension type headache did not vary significantly among control subjects, patients with ocular hypertension, and patients with glaucoma, but migraine was significantly more common in patients with normal-pressure glaucoma (28 %) compared to control subjects.

While previous studies suggested a vasospastic etiology the results of recent studies suggest an association of normal-pressure glaucoma and migraine and a potential, common vascular etiology of both diseases^{7,11}.

Tension type headache and migraine are the

commonest forms of headache disorders.¹⁷ The peak prevalence of migraine occurs between the ages of 30 to 45, after which the prevalence declines¹⁸. Glaucoma is more common between 60-80 years of age. The mean age of our migraine cases is 36,32±10,22 and this may explain the low prevalence of glaucoma among our migraine cases. We didn't find that the glaucoma prevalence among migraine and tension headache cases differs significantly. It should be pointed out that the drugs used to treat migraine produce vasoconstriction (e.g., ergotamines) and in studies that show significant correlations between glaucoma and migraine, it should be reconsidered if these drugs play a role in high glaucoma prevalences. Although we didn't find any POAG or LTG cases used vasoactive drugs, wider and focused migraine and glaucoma series may provide more reliable results. Controlled studies with ergotamines and vasoconstrictor drugs are recommended to clarify their role in particularly low tension glaucoma pathogenesis.

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