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REVIEW ON MIGRANE WITH AURA AND INCREASED RISK OF STROKE

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ABSTRACT

A number of studies have found that migraine is a risk factor for stroke on its own. Migraine with aura is linked to an increased risk of ischemic and hemorrhagic stroke. Migraines with and without aura, on the other hand, should be distinguished. Young women suffering from migraine with aura appeared to have a link between migraine and stroke. Based on the available literature, it was discovered in this review that ischemic stroke is closely associated with migraine with aura, young age, female sex, oral contraceptive use, and smoking habit in migraine with aura patients (MA).

KEYWORDS: Migraine, aura, risk, ischemic stroke, oral contraceptives, smoking.

INTRODUCTION

Migraines are characterized by throbbing pain or a pushing sensation. It is frequently accompanied by nausea, vomiting, and light and sound sensitivity. Migraines can last from hours to days. Migraines are divided into two types: migraine with aura (MA) and migraine without aura (MO). Migraine headaches are frequently preceded by warning signs. One-third of migraine sufferers, will experience one or more of the following warning symptoms known as auras, such as Having trouble speaking, feeling unbalanced or dizzy, Visual issues,

such as blind spots in vision or seeing zigzags and flashing lights, Numbness and tingling feelings Consciousness loss is less common. Some migraine sufferers reported experiencing these symptoms before or during their attacks, which were mostly visual in nature. Symptoms typically appear in 5-20 minutes and last less than 60 minutes. Triggers include hormonal changes, specific foods and beverages, stress, and exercise. Migraines become more common after puberty. It affects up to 20% of the population. The prevalence of migraine in Western countries is consistent and similar, ranging from 10% to 20%, with women affected 3–4 times more often than males at any given age, and it is rare after the age of 50. Migraine with aura is commonly thought to be a risk factor for stroke. In most studies, the link is limited to patients with migraine with aura (MA) and stronger among younger women, who are more likely to have a 2-fold increased risk of stroke, especially if they smoke or use oral contraceptives.

STUDY 1: Leah R *et al.*, 2007 conducted a case- control study of probable migraine with visual aura and risk of ischemic stroke.

The aim of this study is to assess the association of probable migraine with and without visual aura with ischemic stroke.

386 women aged 15 to 49 years with a first ischemic stroke and 614 members with age- and ethnicity-matched controls were studied using data from a population-based case-control study. Subjects were categorized as having no migraine, likely migraine without visual aura, or probable migraine with visual aura (PMVA) based on their replies to a headache symptom questionnaire.

Those with PMVA had a 1.5-fold increased risk of ischemic stroke (95% CI: 1.1 to 2.0) compared to women without migraine. Current cigarette smokers and oral contraceptive users had a 7.0-fold greater risk of stroke (95% CI:1.3 to 22.8) than nonsmokers and non–oral contraceptive users. When compared to women who had no history of migraine, those who had PMVA within the previous year had a 6.9-fold greater adjusted risk of stroke (95% CI: 2.3 to 21.2).

PMVA was linked to an increased risk of stroke, especially in women who did not have any medical factors linked to stroke. Smoking and oral contraceptive use were found to significantly enhance the risk of PMVA.

STUDY 2: Steven et al., 2007 conducted a case control study on use of combined hormonal contraceptives among women with migraines and risk of ischemic stroke.

The purpose of this study was to assess the increased risk of stroke in women with migraine with aura that use combined contraceptive pills.

A nationwide health-care claims database was employed in this study. Using the International Classification of Diseases-9th Revision-Clinical Modifications inpatient services, women aged 15 to 49 years old who had their first stroke between 2006 and 2012 were identified. Each case was matched to four controls based on age. Inpatient and outpatient diagnosis codes were used to identify migraine headaches with and without aura. The National Drug Code from the pharmacy database was used to identify current combination hormonal contraceptive use. The adjusted risk ratios and 95% confidence intervals for ischemic stroke by migraine type and combined hormonal contraceptive use were calculated using conditional logistic regression.

There were 25,887 ischemic strokes among women aged 15 to 49 between 2006 and 2012, resulting in a stroke rate of 11 per 100,000 women. Women with migraine with aura who used combined hormonal contraceptives had the highest risk of ischemic stroke (odds ratio 6.1, 95% CI:3.1-12.1), followed by women having migraine with aura and without combined hormonal contraception (odds ratio 2.7, 95% CI: 1.9-3.7) compared to women with neither migraine with aura nor oral contraceptive use (odds ratio 2.2, 95% CI: 1.9-2.7).

The combined effect of combination hormonal contraceptives and migraine with aura was associated with a 6-fold increased risk of ischemic stroke. In women with migraine without aura, using combination hormonal contraceptives did not significantly raise the risk of ischemic stroke.

STUDY 3: Peng *et al.*, 2017 conducted a cohort study on Migraine and incidence of ischemic stroke.

The aim of the study is to clarify the association between migraine and the incidence of ischemic stroke varies in different subgroups of patients using a population-based database.

Data from the Taiwan National Health Insurance Research Database was used to conduct a nationwide cohort study. A neurologist-diagnosed migraine cohort and a non-headache,

propensity score matched comparison cohort were both extracted. Participants were enrolled in the study between 2005 and 2009, and were monitored until death or ischemic stroke occurred at the end of 2010. A Cox proportional hazards model was used to construct adjusted hazard ratios (aHRs) and 95% confidence intervals (CIs) to compare between-group risks.

Both cohorts (n= 14 119,017 each) were tracked for 3.6 ± 1.3 years on average. During the study period, 744 migraine patients (429,741 person-years) and 617 matched control individuals (436,141 person-years) suffered ischemic stroke. Patients with migraine had a higher risk of ischemic stroke than those in the control group (aHR: 1.24, 95 %CI: 1.12–1.38, p 0.001). Subgroup analysis by age and sex found that women aged 45 years have the highest risk (aHR: 3.44, 95% CI: 2.20–5.39, p 0.001), particularly those with migraine with aura (aHR: 4.58, 95% CI: 2.45–8.56, p 0.001). In men aged 45 years, there was a tendency toward increased stroke risk (aHR: 1.54, 95% CI: 0.96–2.48, p 14 0.075).

Migraine is linked to an increased risk of ischemic stroke, particularly in women under 45 years old who have migraine with aura. The rise in ischemic stroke in young males warrants more investigation.

STUDY 4: Spector *et al.*, 2010 conducted a Meta analysis on migraine headache and ischemic stroke risk.

An updated Meta analysis was performed to quantitatively summarize the strength of association between migraine and ischemic stroke risk.

A total of 622,381 people (13 case-control, 8 cohort studies) were included in the meta-analysis after twenty-one (60 %) of 35 studies passed the selection criteria. Using a random effects model, the pooled adjusted odds ratio of ischemic stroke was 2.30(95 %t confidence interval [CI], 1.91-2.76) when migraineurs were compared to non-migraineurs. For studies that reported relative risks and hazard ratios, the pooled adjusted effect estimates were 2.41 (95 % CI: 1.81-3.20) and respectively (95 %, CI 0.99-2.35). The estimated pooled impact was 2.04 in total (95% CI, 1.72-2.43).

Migraines appear to be linked to a 2-fold higher risk of ischemic stroke. The risk of stroke can be reduced by reduction of other risk factors.

STUDY 5: Janet et al., 1989 conducted a case control study of ischemic stroke risk in migraine patients.

The main aim of the study is to assess the relation (or) link between the migraine and ischemic stroke risk.

Eighty-nine patients between the ages of 15 to 65 with a head computed tomography (CT) scan supporting the diagnosis of ischemic stroke were matched to 178 controls. Patients were classified into three categories based on explicit criteria based on information collected via telephone interview: classic migraine, common migraine, and no migraine headache.

In general, only patients with classic migraine had a higher risk of ischemic stroke [odds ratio (OR) = 2.6, 95% (CI) 1.1-6.61]. Furthermore, when hypertension, diabetes, or smoking are present, classic migraine does not appear to increase the risk of ischemic stroke; however, when these other risk factors are absent, classic migraine is strongly and significantly linked to the risk of ischemic stroke no hypertension, [OR = 5.7 (95% CI 1.6-20.2)]; no diabetes, OR = 3.4 (95% CI 1.2-9.3); non-smoker OR = 4.3 (95% CI 1.2-l S.O).

Data suggest that classic migraine is associated as a risk factor for ischemic stroke, even though they did not have any medical factors linked to stroke.

CONCLUSION

A link between migraine and the onset of ischemic stroke has been discovered. Furthermore, this link was discovered to be influenced by age, gender, and migraine subtype. It was discovered that migraine with aura had a higher risk of ischemic stroke than migraine without aura. It was discovered to be less common in elderly people than in younger people, with female research showing the strongest link. When compared to women who had never had a migraine, women aged 45 and above reported a significant link between migraine with aura and the risk of ischemic stroke, but no link between migraine without aura and the risk of stroke. Smokers and oral contraception users are at a significantly higher risk.

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CONFLICT OF INTEREST

We declare that we have no conflict of interest.

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