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# Relationship of Migraine in epileptic patients

Salim A.Jasim[*1],Ayied M. Al-Obaidy[*2],Ahmed K.Rabeea[*3]
[*1]Dept. of medicine, Salahaldin General Hospital. [*2] Dept. of Neuro Medicine, college of Medicine, Tikrit university. [*3]Dept. of E.N.T, Salahaldin General Hospital- Iraq.

**Abstract**

**Background** : Migraine and epilepsy are among the commonest neurological diseases observed in outpatient neurological settings؛although still incompletely clarified, the possible existence of a link between migraine and epilepsy has long been debated .**Patinas and methods** :This is a clinical study designed to illustrate the relationship between epilepsy and migraine by history and clinical examination .One hundred twenty five patients had epilepsy consulting the outpatient neurology clinic of Tikrit Teaching Hospital in Tikrit city, 24 patients from them suffering from migraine, Were included in this study from November 2011 to August 2012.**Results:** This study had been carried out from November 2011 to August 2012. Following the criteria of the (HIS), 125 patients Known as epileptic 24 patients have migraine, with female to male ration of 2.4: 1 the peak age at presentation was 35 –54 years old age. Migraine without aura was found in 66.60% , Migraine with aura was found 33.40% .the study show that the phonophobia was highest symptoms (75%), stress (physical activity) were the most common precipitating factors, that represent (79%) , while the proportion of postictal headache was the highest, which represent (83.34%), carbamazepine was the most drug used by patients about 11(45.8%) cases.While the partial epilepsy was most common type which represent (75%).**Conclusions:** from the results study, it can be concluded that: prevalence of migraine in epilepsy is (19.2%), incidence in females higher than males, the peak incidence was in $4^{th}$-$6^{th}$ decade .physical activity is the most triggers factor, while phonophobia was the most associated symptoms. common type of migraine was more than classic type, also headache poetically was more prevalent that preictaly.

**Keyword**: Migraine ; epileptic patients ; phonophobia ; postictal headache ; carbamazepine ; phonophobia .

## Introduction:

Migraine and epilepsy are among the commonest neurological diseases observed in outpatient neurological settings؛although still incompletely clarified, the possible existence of a link between migraine and epilepsy has long been debated[1] both disorders are characterized by recurrent neurological attacks with a partial clinical and therapeutic overlap. A number of symptoms, including poste-vent aired or loss of consciousness, visual disturbances, visual and hormonal triggering factors, vertigo parasthesias, hemiparesis and aphasia, can be commonly observed in both conditions moreover there is evidence of an epidemiological association between these two conditions. Besides similarities, a number of substantial differences between migraine and epilepsy are to be highlighted. [2]the prevalence of idiopathic forms is much more frequent in migraine than in epilepsy, the definite female prevalence reported in migraine is not evident in epilepsy.[3]migraine prevalence is low during childhood, peaks in above all in women, and decrease in old age, on the country , epilepsy incidence is highest in extremes of life.[4]in both diseases, monogenic forms are infrequent, but a familial transmission has been found more frequently in

migraine. Finally, because the consequences of even occasional seizure are more health-threatening than those of migraine, the traditional goal of epilepsy treatment is the complete control of seizures whereas migraine treatment may be tailored to the reduction of disability within satisfactory limits.[4]comorbidity of migraine and epilepsy has long been suspected but has seldom been systematically investigated.[5,6]the degree of association between the two disorders is important from both clinical and theoretical points. Practically an association would imply that clinicians treating either disorder should have high index of suspicion of the other and should be well informed about diagnosis, classification and treatment of both disorders.

When the two disorders occur together treatment strategies of one should include consideration of the other.[7,8]theoretically an association could provide to the etiology of both conditions. Some suggest common genetic causes for migraine and epilepsy.[9]neuronal hyper excitability might explain the comorbidity of migraine and epilepsy.[10]in epileptic patients headache tends to be overlooked by both the patient and the treating physician either because headache is considered as part of the seizer manifestation and hence given minor attention.[11] in one study in epileptic patients having migraine, the diagnosis of migraine had been overlooked in 56%of cases. A careful detailed assessment of headache is therefore required by any physician treating epileptic patients.[12] Aim of the study: this study aim for evaluating the migraine in epileptic attending Tikrit Teaching Hospital.

**Patients and Methods**:

**Study design**: Across sectional study of randomly selected patients attending neurological department in Tikrit Teaching Hospital was conducted from November 2017 to August 2018.

**Study group:** A total 125 epileptic patients were seen during study, all of them were diagnosed as partial or generalized epilepsy, migraine was identified in 24 patients, there are no reliable data on the relationship of migraine with epilepsy in Salah- alddin on which to base-size calculations.

**Diagnosis of cases:** A self – created questioners list, which relied upon the international headache society criteria of migraines headache was implemented for individual, data which were collected through individual interviews for epileptic patients. The data included demographic information, characteristics (type and frequency) of headache, associated symptoms, triggering conditions and family history. To avoid replication of data patient attending the neurological department regularly or frequently were included the 1st meeting only.

Exclusion criteria: Space occupying lesions causing both diseases.[CT.MRI]; Trauma and Preeclampsia.

**Statistical analysis:** The data collected on (125) epileptic patients,24 from theses had migraine who were included in the study and studied to assess the relationship of epilepsy with migraine. Conventional statistical techniques were applied to the data in this study of distribution by frequency percentage and table representation.

**Results :**

**Table (1) distribution of migraine related epilepsy according gender groups.**

| Sex | No. of epileptic patients | Migraine in Epileptic patients | % |
|---|---|---|---|
| Male | 54 | 7 | 12.9% |
| Female | 71 | 17 | 23.9% |
| Total | 125 | 24 | 19.2% |

Frequency of migraine in epilepsy out of the 125 patients, who were diagnosed as epilepsy among those contacting the Tikrit teaching hospital, there were 24(19.2%) cases suffering from migraine, 17cases out of the 71 female with epilepsy had migraine (23.9%) , while 7 cases out of the 54 male with epilepsy had migraine (12.9%).

**Table (2) : the distribution of the patients according to age groups.**

| Age | Migraine with Epilepsy | % |
|---|---|---|
| <35 | 10 | 41.6 |
| 35-54 | 12 | 50 |
| >55 | 2 | 8.4 |
| Total | 24 | 100 |

The distribution of patients regarding age groups as the follow, the most common affecting age group was between 35-54 that represent 12(50%) cases then followed by less than 35 years that represent 10(41%) followed by more than 55years which represent2(8.4%)

**Table (3) : Precipitating Factors for migraine in epilepsy .**

| Aggravation | Migraine in Epilepsy | % |
|---|---|---|
| Physical activity | 19 | 79 |
| Psychological stress | 17 | 70 |
| Food | 5 | 20.8 |
| Light | 3 | 12.5 |

Precipitating Factors: Trigger factors are common in migraine and the same trigger factors can result in different types of migraine depending on the individual. In present study physical activity emerges as the most important trigger factor of migraine with epilepsy that represent (79%), then followed by psychological stress which from (70%), then followed by food which form(20.8%), and the lest on was light that represent (12.5%).

**Table (4) Migraine related to types of epilepsy.**

| Type of Epilepsy | Migraine in Epilepsy | % |
|---|---|---|
| Partial epilepsy (%) | 18 | 75 |
| Generalized epilepsy (%) | 6 | 25 |
| Total | 24 | 100 |

Migraine Related to Types of Epilepsy: Regarding migraine related to types of epilepsy, the highest frequency was in partial epilepsy that forms (75%), while in generalized epilepsy it occurs in 6(25%) cases only.

**Table (5 ) the distribution of patients according to anti - epileptic**

| Anti – epileptic drag | Migraine in epilepsy | % |
|---|---|---|
| Carbamazepine | 11 | 45.8 |
| Sodium valproate | 6 | 25 |
| Clonazepam + Carbamazepine | 4 | 16.7 |
| Lamotregine | 2 | 8.3 |
| Topiramite | 1 | 4.2 |

Anti - epilepsy drugs: regarding antiepileptic drugs used for epilepsy with migraine , the most common drug was carbamazepine which used by 11 patients (45.8%) then followed by sodium valproate which used by 6 patients(25%) while combination drugs(carbamazepine and clonazepam) were used by 4 patients (16.7%), lamotregen used by 2 patients (8.3%) and the least one Topiramite which used 1 patients only (4.2%).

**Discussion:**

As there no laboratory test or biological signs enabling the diagnosis of migraine. The international head ache society criteria classification system for headache published in 1988 has listed operational diagnostic criteria for migraine with permitted a systematic approach to study migraine.[13]In this study recruited 125 patients of know epilepsy, 24 patients had migraine, their age were more than 18 years old this mainly because headache attack decrease in frequency and severity with advancing age which go with other study[14]this study showed an overall female : male ratio of 2.4: 1 this result is compatible to most of studies , (Tonnini *etal.*,)[15]found female : male ration 2.4 : 1 .Also (kyoungHeo)[ 16]found female : male ratio 2.3: 1. [17].

They studied 172 epileptic patients , migraine occurred in 34 patients , female migraineur 24 cases and male10 cases , female : male ratio 2.4:1 .concerning the frequency of migraine in epileptic patients with gender difference noted in this study , the female gender was greater than male this is compatible with other study in the worldwide for explanation *etal.,2014*) [18], found the percentage of migraine in epileptics females (57.3%) and (51.6%) in epileptics males.

So that there is a significant preponderance in female over males this may be attributed to hormonal changes that occur in females mainly estrogen [19 , 20] , while the prevalence of migraine in epileptic patients of this study was (192%) this is approximately compatible with ( Marks and Ehrenberg)[21] who found that out of 395 patients with epilepsy , 79 ( 20 % ) had migraine according to ( HIS) criteriaRegarding the age of occurrence , the age groups were distributed as in three age groups ( tab.2) , the largest proportion of the patients was within the age group of 35-54 years , while the least age group was more than 55 years , this is approximately similar to ( Tonnini *etal.*,) [17], in 71 (45.8%) of patients were between age 35 -54 years , 60 ( 38.6 % ) patients were less than 35 years , and the age group that was more than 55 years represent 25 ( 61.1%) patients .of the various migraine related epilepsy triggers factory which was found in our study e.g . physical activity , psychological stress , Light , food , Migraine attack was aggravated by physical activity in (79%) of our cases this is in agreement with ( Rasmussen *etal.*, ) [22] , who found (82%) of patients trigger physical activity .

(77%) of our patients mentioned that their migraine related epilepsy was related to psychological stress which mean that the mood of the patients can contribute largely to the precipitation of the headache attack which is compatible to ( Naome *etal.*,) [23] , which shows that the psychological stress ( 82 % ) is the most prominent factor.

Current study showed presence of migraine in partial epilepsy was found in ( 75%) of casas while in generalized epilepsy was ( 25 % ) this result is approximately nearer to study of ( KyoungHeo)[16] , that found the migraine in partial epilepsy ( 78.4%) and migraine in generalized epilepsy represent ( 21.6%) .Regarding the treatment of migraine in epileptics patient 11 ( 45.8%) of patients was used carbamezipine, followed by 6 ( 25%) of patients taking sodium valproate , than 2 patients were used Lamotregine , and 1 (4.2%) patient was used Topiramite , and 4 (16.7%) patients were taking combind drugs ( Carbamezipine and clonazepam ) , these result not agree with the result of Mathew) [24] which found the anti convalsantdivalproex sodium ( Depakote ) is approved by the united states food and drug administration (FDA) for migraine prophylaxis,It's efficacy has been supported by open and double – blind placebo – controlled studies. At present the efficacy of Topiramite and valproate in migraine prophylaxis is confirmed by a number of randomized controlled studies.[25-26]AEDs are effective in migraine therapy because they act on brain excitability : Topiramite reduces CSD in rat,in a magneto-encephalographic study the neuronal excitability was reduced after a 30- day sodium valproate treatment[27].

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