Psychiatric Co-morbidities in Women with Epilepsy

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Abstract

Background: The co-existence of psychiatric co-morbidities with Epilepsy in women is multifactorial and complex, being closely related to hormonal status, medication side effects, and psychosocial factors.

Aims: We aimed to study associated Psychiatric co-morbidities in women with Epilepsy (WWE), and correlate the same with seizure subtype and medication compliance with treatment and seizure control.

Material and Methods: This was a prospective, interview based study in OPD over 18 months, evaluating WWE over 13 years of age with at least 1 seizure in the last 1 year. The primary outcome evaluated was the psychiatric diagnosis. Covariables assessed included sociodemographic data, details of seizures and treatment taken. Study population included 143 WWE. Thirty women with a chronic disease, viz., Diabetes and with no h/o seizures, and another group of 25 healthy women from the community with no seizures ever and no Diabetes, were evaluated as 2 sets of controls.

Results and Conclusions: One hundred and forty three women with Epilepsy (WWE) were recruited into the study. Psychiatric co-morbidity prevalence was 28.6 % (41/143) in WWE, 13.7 % in women with Diabetes and 8.3 % in women with no Epilepsy or Diabetes (normal controls). Overall, Depression was the commonest psychiatric co-morbidity. Psychiatric co-morbidity was significantly more in WWE as compared to normal controls. Seizure duration over 2 years, complex partial seizures and polypharmacy were significantly linked to Psychiatric co-morbidities.

Editorial Viewpoint

- Management of women with epilepsy and psychiatric co-morbidities is complex.
- Depression is the most common manifestation.
- Psychiatric comorbidity is associated more commonly with seizure duration, complex partial seizures and polypharmacy.

The co-existence of Epilepsy with psychiatric co-morbidities is multifactorial and complex. Behavioral effects, including depression, anxiety, aggression, and psychosis, can be a consequence of Seizure-related factors (eg, complex partial seizures of temporal lobe origin), psychosocial factors, or adverse effects of antiepileptic drugs.¹ Psychiatric co-morbidities in Women with Epilepsy (WWE) may be related to hormonal and reproductive status which are affected by both the Epilepsy type and the medications, over and above other factors common to both genders. Data on psychiatric co-morbidities in WWE in the Indian population is limited.

We aimed to study women with epilepsy in the Medicine & Neurology OPDs, with reference to Seizure type, compliance with medications and seizure control, and associated Psychiatric co-morbidities.

M&M: This was a prospective, interview based study. Women over 13 years of age with an established diagnosis of Epilepsy, and at least 1 seizure in the last 1 year were included. We excluded women with mental retardation. Patients were prospectively recruited over a period of 18 months from the Medicine and Neurology OPDs and followed up 3 monthly for a year.

The primary outcome evaluated was the psychiatric diagnosis. Covariables assessed included details of Seizure type and frequency, and treatment details. Sociodemographic details were collected using a semi-structured proforma, and ILAE-2010 revised terminology was used to classify seizures. Seizure duration, type and frequency of seizures in last 1 year, type of treatment, age of onset of epilepsy, recent seizure frequency and details of prescribed antiepileptic drugs were...
Table 1: Psychiatric comorbidities in women with epilepsy in correlation with seizure diagnosis and comparison with prevalence in control groups

<table>
<thead>
<tr>
<th>Psychiatric comorbidities in WWE</th>
<th>Epilepsy type</th>
<th>In women with DM</th>
<th>In normal</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Genetic epilepsy 16</td>
<td>Structural epilepsy 118</td>
<td>Cryptogenic / unknown epilepsy 9</td>
</tr>
<tr>
<td>Depression</td>
<td>2</td>
<td>19</td>
<td>1</td>
</tr>
<tr>
<td>Generalised anxiety disorder</td>
<td>0</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Panic disorder</td>
<td>0</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>Schizophrenia</td>
<td>0</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>OCD</td>
<td>0</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>Conversion disorder</td>
<td>0</td>
<td>3</td>
<td>0</td>
</tr>
<tr>
<td>Total</td>
<td>2 (12.5%)</td>
<td>33 (27.9%)</td>
<td>6 (66.6%)</td>
</tr>
</tbody>
</table>

Prevalence of psychiatric co-morbidity in WWE versus those with Diabetes= OR 2.51, 95% CI 0.82-7.66; p = 0.105; WWE versus controls = OR 4.42, 95% CI 1.28 – 15.2; p = 0.01; Women with diabetes versus controls = OR 1.5, 95% CI 0.31 -7.55; p = 0.60

Table 2: Comparison of demographic parameters and clinical characteristics in women with epilepsy with psychiatric morbidity (n = 41) and without psychiatric morbidity (n = 102)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Psychiatric comorbidity (%)</th>
<th>RR</th>
<th>95% confidence intervals</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unmarried-42</td>
<td>12</td>
<td>0.99</td>
<td>0.56-1.75</td>
<td>0.98</td>
</tr>
<tr>
<td>Education&lt;5 yrs-49</td>
<td>11</td>
<td>0.70</td>
<td>0.38-1.27</td>
<td>0.24</td>
</tr>
<tr>
<td>Family income&lt;5000/mth-22</td>
<td>08</td>
<td>1.33</td>
<td>0.71-2.49</td>
<td>0.36</td>
</tr>
<tr>
<td>Sz Duration &gt;2 yrs-92</td>
<td>36</td>
<td>3.99</td>
<td>1.67-9.53</td>
<td>0.002</td>
</tr>
<tr>
<td>Complex partial Sz-58</td>
<td>30</td>
<td>3.99</td>
<td>2.18-7.31</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Sz frequency 1/mth or more-36</td>
<td>14</td>
<td>1.54</td>
<td>0.91-2.64</td>
<td>0.105</td>
</tr>
<tr>
<td>Polypharmacy-64</td>
<td>27</td>
<td>2.30</td>
<td>1.36-4.14</td>
<td>0.002</td>
</tr>
</tbody>
</table>

RR= Relative risk

ascertained from clinical notes and direct interview. Polypharmacy was defined as usage of 2 or more antiepileptic drugs for previous 6 months. Psychiatric evaluation of all the women was done in Psychiatry OPD at the same visit as that of recording of seizure frequency. We used the Structured Clinical Interview schedule for DSM-IV 2002 patient version2 to assess psychiatric co-morbidity in all subjects.

With the assumption of 30% prevalence of psychiatric disorders in people with epilepsy, and 10% in the control group, we decided to evaluate over 100 WWE. (The study had a power of 80% and an alpha error of 5% with sample size of 80 WWE). We evaluated 143 women with Epilepsy and chose 30 controls with a chronic disease, viz., DM, with no h/o seizures, and another cohort of 25 healthy women from the community with no seizures ever and no h/o DM, as 2 sets of controls.

All participants provided informed consent and the study protocol was approved by the institutional review board of the institution.

Statistical methods used included SPSS–WIN version 9.0. We computed Odds Ratios (OR) with 95% confidence intervals (CI) for comparisons of binary outcomes, and we calculated RR and 95% CI for variables between WWE with and without psychiatric co-morbidity.

Results

One hundred and forty three women with Epilepsy (WWE) were recruited into the study. They comprised 16 women with Genetic Epilepsy, 118 with Structural Epilepsy, and 9 with Cryptogenic Epilepsy. The 16 women with genetic Epilepsy had an average age of 16.3 years (range 12-19.4 years) and included 10 patients with Juvenile myoclonic epilepsy, 1 patient with previous absence episodes in childhood who later developed generalized seizures on awakening, 2 patients with myoclonic seizures and GTC on awakening, and 3 patients with Generalised epilepsy starting in adolescence with febrile seizures in early childhood. History, semiology and EEG in all these patients was consistent with a Genetic Epilepsy syndrome. The structural epilepsies (118) included 47 Mesial temporal sclerosis, the rest consisting of healed calcified or gliotic lesions due to granulomas, old infarcts or trauma. Cryptogenic Epilepsy was diagnosed when semiology or EEG suggested a partial onset (and did not fit into a genetic epilepsy type), but the imaging did not show any concordant lesion. Complex partial Sz, either remaining so, or progressing to a generalized tonic clonic Sz, were seen in 58/143 patients.

Mean age of patients was 33.4 years (range 12-71 yrs), being similar in the group with and without psychiatric co-morbidity.

A total of 41/143 women had a psychiatric co-morbidity, depression being the commonest co-morbidity (Tb 1). In this study, Schizophrenia was present in 6 patients overall, 3 of them belonging to the Cryptogenic group. Psychiatric co-morbidity prevalence was 28.6 % in WWE, 13.7 % in women with Diabetes and 8.3 % in women with no Epilepsy or Diabetes. Psychiatric co-morbidity was significantly more in WWE as compared to normal controls; Although the prevalence was twice as much in WWE as compared to diabetic women, this did not achieve statistical significance.

Table 2 shows the correlation of psychiatric co-morbidity with sociodemographic parameters and Seizure characteristics. In this study, among the 68 patients on
polypharmacy, the commonest combinations were Levetiracetam plus Clobazam (24), Carbamazepine plus Clobazam (12) and Phenytoin plus Levetiracetam plus Clobazam (10). Seizure duration over 2 years, complex partial seizures and Polypharmacy were significantly linked to Psychiatric co-morbidities.

Discussion

Studies on Psychiatric co-morbidities in persons with epilepsy have consistently noted a significantly higher level of various psychiatric illnesses, including Depression, anxiety and psychoses in these patients, as compared to controls. Reported prevalence in studies in Caucasian populations has been 6% in people with all-cause Epilepsy, going up to over 20% in Temporal lobe epilepsies, and in Indian studies has been 28.7% and 32.5% in 2 studies. Depression has been noted to be the commonest psychiatric co-morbidity in all the studies. None of these studies found a gender difference in the prevalence of psychiatric co-morbidities in PWE.

In our study, we compared the prevalence of psychiatric illnesses in WWE with age-matched women with Diabetes as a control population with a chronic illness, and with women with no illnesses from the community. The results of our study are consistent with the prevalence shown in PWE in studies from South India, as well as from studies in higher income countries. Depression was the commonest disorder in our study too, similar to the reports in other Indian studies. WWE in our study had a rate of psychiatric illnesses more than double than in women with Diabetes, and the control group with no illnesses, highlighting the fact that psychiatric co-morbidity in Epilepsy is biological, and not a mere reaction to the stress of living with a chronic illness.

In our study, longer seizure duration, presence of complex partial seizures and polypharmacy were significantly linked to psychiatric co-morbidity. Seizure related variables such as complex partial seizures, frequency of seizures, temporal proximity to seizures, poor drug compliance, anticonvulsant polypharmacy and a family history of psychiatric disorder have been identified previously as increasing the risk of developing psychiatric disorder though not all previous reports have identified seizure frequency as contributory.

WWE face problems peculiar to their gender, and psychiatric co-morbidity may be linked to these. We looked for associations with unmarried state in the population of marriageable age (18 and above), with low family income and lower education levels, but these were found to be statistically not significant. Biologically, the presence of PCOD, both in association with seizure subtype as well as medication type, may influence development of psychiatric morbidity as an additional factor.

In conclusion, women with epilepsy have associated psychiatric co-morbidity in 28.7%, significantly more than in the non-epileptic population, and this is significantly linked to polypharmacy, longer duration of epilepsy and complex partial seizure subtype.

References