Prevalence of Anemia in Patients Presenting with Febrile Fits

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INTRODUCTION

Febrile fit is a term used for children under five years of age. Febrile fits have been a major pediatric challenge due to high prevalence rate found among young under-five-year children. Clinically a febrile fit child presents 38°C temperature or greater than this without presence of cerebral infection or and metabolic disturbances. The period of fits is no more than 15 minutes in cases of simple febrile fit while complex febrile fits are >15 minute with reoccurring episodes. The simple febrile fit also termed as generalized tonic-clonic. Status-epilepticus has a seizure duration more than 30 minutes.

There has been an immense awareness regarding the febrile fit within recent years. The complications rate in context with febrile fits seizures has also been presented in high prevalence in recent years than previous years. In western countries its prevalence is from 2% to 5% while in Asian countries its prevalence is around 5% to 10%. Complication risks of Aspiration as well as psychological trauma are most frequent not only for the child but also for the parents.

Iron deficiency anemia (IDA) is a prevailing condition especially of developing countries in which the mineral iron becomes deficient in the body. This mineral is required in hemoglobin synthesis as well as neurological process maintenance. The conditions in which a child is deficient of iron may result in poor growth, tiredness, poorly developed memory and mental lethargy. Such situations may lead to formation of febrile fit in IDA children. The present study was designed for analyzing the prevalence of IDA n children suffering from febrile fit. This study would assist in identifying the association between these two variables which would further benefit in proper management and treatment of a child suffering from febrile fits.

MATERIALS AND METHODS

This prospective study was conducted at Medicine, Abbas Institute of Medical Sciences/Medical College, Muzafarabad. Ninety patients within the age limit of 6 months to 5 years were enrolled. All the children suffering from febrile fits were included. However, those children who were having some severe growth retardation, mental illness were excluded. The patients' blood sample comprising of 4cc was pooled and sent for biochemical analysis of hemoglobin, serum ferritin as well as RCDW. The results of each patients' reports were used for analysis of their anemia status. Hb less than 10g/dl, while RCWD greater than 16% and serum ferritin less than 7ng/ml was taken as cut off for determining iron deficiency anemia in any pediatric case. The demographic details, gender, biochemical analyses result in addition to the clinical history and symptoms of each patients was documented on a standardized proforma. Data was analyzed by using SPSS version 26.0 where chi square test was applied for analyzing the results. P value <0.05 was taken as significant.

RESULTS

The mean age of the patients was 2.6±1.5 years with more boys suffering from febrile fits. Most of the children belonged to the age group of 1-3 years. The biochemical blood analysis reports revealed that there were 56.25% those children who were suffering from hemoglobulin level less than 10g/dl. The overall prevalence of iron deficiency anemia was found to be 33.75 among boys while 25% within the girls.

Table 1: Association of age with febrile fits and iron deficiency anemia

<table>
<thead>
<tr>
<th>Age (years)</th>
<th>With Iron Deficiency</th>
<th>Without Iron Deficiency</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;1</td>
<td>9 11.25%</td>
<td>7 8.75%</td>
<td>0.12</td>
</tr>
<tr>
<td>1-3</td>
<td>28 35%</td>
<td>24 30%</td>
<td>0.45</td>
</tr>
<tr>
<td>3-5</td>
<td>10 12.5%</td>
<td>2 2.5%</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Total</td>
<td>47 58.75%</td>
<td>44 41.25%</td>
<td>&lt;0.05</td>
</tr>
</tbody>
</table>

Table 2: Blood analysis of children with febrile fits.

<table>
<thead>
<tr>
<th>Blood Analysis</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hb Levels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 10 g/dl</td>
<td>45</td>
<td>56.25</td>
</tr>
<tr>
<td>Greater than 10 g/dl</td>
<td>35</td>
<td>43.75</td>
</tr>
<tr>
<td>RCWD</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less than 16%</td>
<td>34</td>
<td>42.5</td>
</tr>
<tr>
<td>Greater/equal Than 16%</td>
<td>45</td>
<td>57.5</td>
</tr>
<tr>
<td>S. Ferritin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less/equal 7ng/ml</td>
<td>44</td>
<td>55</td>
</tr>
<tr>
<td>Greater 7ng/ml</td>
<td>36</td>
<td>45</td>
</tr>
</tbody>
</table>

The biochemical blood analysis reports revealed that there were 56.25% those children who were suffering from hemoglobulin...
level less than 10g/dl while 57.5% had red cell distribution width as ≥16% (Table 2). There was no clinical history of febrile fits among parents of each child. The overall prevalence of iron deficiency anemia was found to be 33.75% among boys while 25% within the girls with a total deficiency percentage as 58.75% which was significantly higher (P<0.05) [Figure 1].

![Figure 1: Prevalence of iron deficiency anemia in boys and girls with febrile fits](image)

DISCUSSION
The present study was conducted for determining the prevalence of IDA in febrile fit children. The results of this study showed that 58.75% children suffering from febrile fit were also having IDA. This leads to an idea of strong association between the febrile fit and IDA among children under five years of age. The similar results have been quoted by other studies of Pakistan to an idea of strong association between the febrile fit and IDA among children under five years of age. The association of febrile fit with male gender has been well documented in the previous literature as well as in the current research. Boys were associated with strong clinical history as well as higher number in reference to febrile fit formation. The mean age of this study was 2.6±1.5 years. Various other studies have reported an age range of 1.5 years which is slightly less than the age recorded in present study. However the variance might be due to difference in clinical settings of various researchers with different set of pediatric population visiting. The mean hemoglobin level has been reported less than ten gram per deciliter from various other studies of Pakistan. The present study has also reported similar findings.

CONCLUSION
There is a strong association between febrile fits and iron deficiency anemia with a percentage of iron deficiency anemia as 58.75% in children with febrile fit.

REFERENCES