HIGH PREVALENCE OF ASTHMA SYMPTOMS IN INDUSTRIAL AREA CHILDREN, SIGNIFICANTLY ASSOCIATED WITH TOWEL AND CHADDAR MANUFACTURING FACTORIES

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ARTICLE INFO

ABSTRACT

Objective
• Its important to find out what are the major risk factors for Asthma in children and can we prevent them in future?
• Our study try to analyze connection between environmental allergens to asthma, specially in children living in Textile industrial area.

Methodology: We preformed a cross sectional observational study from June 2012 to June 2017 in which asthma symptoms were defined according IAP-ATM module, GINA guidelines. Like recurrent cough, nocturnal cough, rhinitis, breathlessness were noted. The association between Towel-Chaddar industry and prevalence of asthma symptoms were calculated.

We included total 1146 children of asthma coming for respiratory clinic in last 5 years. Results--We included total 1146 children of asthma coming for respiratory clinic in last 5 years

• 361 are from industrial area & near that.
• 785 children are from other areas of 4 districts.
• Asthma symptoms were recorded in these children.
• The prevalence of asthma symptoms is more in these children (31.5%), may be associated with allergens in the form of cotton fibres, dyes & other raw material used in this industry.

Conclusion
Our findings suggest that the children living in MIDC industrial area in Solapur, where there is lot of chaddar and towel industry have more risk factor for developing asthma than other children. They need higher doses of inhalers & more prolonged therapy than other babies to become symptom free. They develop more acute exacerbation than other babies.

INTRODUCTION

Objective
• Its important to find out what are the major risk factors for Asthma in children and can we prevent them in future?
• Our study try to analyze connection between environmental allergens to asthma, specially in children living in Textile industrial area.
• The continuous exposure to allergens in the form of raw material needed for chaddar, towel and dyes as possible risk factor for having asthma symptoms.
• To aid in the early identification, in younger children who are at high risk of developing persistent asthma and treat them to have complete control.

Methodology
The present study was conducted at Ashwini Rural medical college, Kumbhari, SPAN Critical Care Centre, Solapur from the period of last 5 Years.

• We preformed a cross sectional observational study from June 2012 to June 2017 in which asthma symptoms were defined according IAP-ATM module, GINA guidelines. Like recurrent cough, nocturnal cough, rhinitis, breathlessness were noted. The association between Towel-Chaddar industry and prevalence of asthma symptoms were calculated. Our study try to analyze connection between environmental allergens to asthma outgrowing in

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children. Random selection of patients are done on clinical base studies.
- The Present study consist of randomly selected 1146 babies attending respiratory clinic in last 5 years.

Selection Criteria

Inclusion Criteria
- Children presenting with signs and symptoms of asthma.
- Either Sex
- Children aged between 1 upto 12 Yrs.

Exclusion Criteria
- History of pneumonia
- Congenital heart disease
- Neuromuscular disorders

Data Collection
- Demographic characteristic such as sex and age were recorded on the predesigned performa.
- Area of living, crowded, industrial area etc were noted.
- They were interviewed for the history and symptoms. 
Examination was done.
Accordingly classified.

Procedure
A past history of croup, bronchiolitis, acute respiratory illness, wheeze associated lower respiratory infections is determined at the onset of study, when the children were from 6 month to 5 yrs of age.
- Airway hyperresponsiveness is determined by primarily by signs and symptoms, only when needed PFT was done( FEV/ FVC ratio, PEER noted)
- Gradings done.

Statistical analysis
The data obtained was coded and entered into Microsoft Excel spread sheet
The categorical data was expressed as rates, ratios and percentages.

RESULTS
We included total 1146 children of asthma coming for respiratory clinic in last 5 years.
- 361 are from industrial area & near that.
- 785 children are from other areas of 4 districts.
- Asthma symptoms were recorded in these children.
- The prevalence of asthma symptoms is more in these children (31.5%), may be associated with allergens in the form of cotton fibres, dyes & other raw material used in this industry.

Table 1 Sex Distribution Distribution (n=361)

<table>
<thead>
<tr>
<th>Sex</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>189</td>
<td>52.4%</td>
</tr>
<tr>
<td>Female</td>
<td>172</td>
<td>47.6%</td>
</tr>
<tr>
<td>Total</td>
<td>361</td>
<td>100%</td>
</tr>
</tbody>
</table>

Table 2 Symptoms Variation Distribution (n=361)

<table>
<thead>
<tr>
<th></th>
<th>Day times</th>
<th>Night time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percentage</td>
<td>37%</td>
<td>42%</td>
</tr>
</tbody>
</table>

Graph 2 Symptoms Variation

Table 3 Past History Distribution (n=361)

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Significant family history</td>
<td>125</td>
<td>34.6%</td>
</tr>
<tr>
<td>No Significant family history</td>
<td>236</td>
<td>65.4%</td>
</tr>
</tbody>
</table>

Table 4 Past acute respiratory illness Distribution (n=361)

<table>
<thead>
<tr>
<th>Past H/O respi illness</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Past acute respi illness</td>
<td>160</td>
<td>44.3%</td>
</tr>
<tr>
<td>NO significant respi illness</td>
<td>201</td>
<td>55.8%</td>
</tr>
</tbody>
</table>

Table 5 Clinical Diagnosis Distribution (n=361)

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mild Persistent</td>
<td>184</td>
<td>51.2%</td>
</tr>
<tr>
<td>Moderate Persistent</td>
<td>78</td>
<td>20.8%</td>
</tr>
<tr>
<td>Severe Persistent</td>
<td>12</td>
<td>3.2%</td>
</tr>
<tr>
<td>Intermittent</td>
<td>87</td>
<td>24.8%</td>
</tr>
<tr>
<td>Total</td>
<td>361</td>
<td>100%</td>
</tr>
</tbody>
</table>

Graph 6 Age Distribution Distribution (n=361)

Table 7 presenting symptoms Distribution (n=361)

<table>
<thead>
<tr>
<th>Clinical Signs</th>
<th>Number</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cough</td>
<td>288</td>
<td>80</td>
</tr>
<tr>
<td>Breathing Difficulty</td>
<td>361</td>
<td>100</td>
</tr>
<tr>
<td>Chest tightness</td>
<td>66</td>
<td>18.4</td>
</tr>
<tr>
<td>Fever</td>
<td>72</td>
<td>20</td>
</tr>
<tr>
<td>Recurrent Wheeze</td>
<td>361</td>
<td>100</td>
</tr>
</tbody>
</table>
CONCLUSION
Our findings suggest that the children living in MIDC industrial area in Solapur, where there is lot of chaddar and towel industry have more risk factor for developing asthma than other children. They need higher doses of inhalers& more prolonged therapy than other babies to become symptom free. They develop more acute exacerbation than other children.

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