LETTER TO THE EDITOR

PEFR IN RELATION TO PHASES OF PREGNANCY

Sir,

We wish to report PEFR changes during different trimesters of pregnancy. The study was conducted in collaboration with Department of Obstetrics and Gynaecology, Princess ESRA Hospital. Subjects belonging to same socioeconomic status, having normal Hb and BP were randomly picked up from antenatal clinic. A total number of 117 pregnant women (I, II and IIIrd gravida) in the age group of 19-27 years were the subjects for this study. After asking the subjects to relax for 15 minutes, following parameters were recorded: Height, Weight, BSA, BMI, RR, Chest expansion in respiration and PEFR. PEFR was studied using FERRARIS pocket peak flowmeter (1).

Subjects were divided into three groups, i.e. Group 1 1st Trimester (n = 12), Group 2 IInd Trimester (n = 35) and Group 3 IIIrd Trimester (n = 70).

Mean ± SD values and P-values of above parameters were calculated for each group. From the above data, it is inferred that:

PEFR of the subjects shows a gradual decrease from Group-I to Group-III. The decrease in PEFR in Group-I versus Group-II & Group-I versus Group-III is highly significant (P<0.01), confirming other studies (2, 3, 4). Gradual reduction in PEFR with increase in gestation period could not be explained on the basis of anthropometric parameters (5). For this, there could be 3 possible explanations.

1. Mechanical effect of enlarging gravid uterus affecting vertical dimension by restricting diaphragmatic movement which contributes normally 75% of the change in intrathoracic volume during quiet inspiration (6).

<table>
<thead>
<tr>
<th>Pregnancy</th>
<th>Age</th>
<th>Ht</th>
<th>Wt</th>
<th>BSA/m²</th>
<th>BMI</th>
<th>RR</th>
<th>Chess Expansion</th>
<th>PEFR (L/Mint)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st-Trimester</td>
<td>23.0±3.6</td>
<td>1.6±0.06</td>
<td>53.0±16.4</td>
<td>1.54±0.09</td>
<td>22.99±0.09</td>
<td>23.5±4.2</td>
<td>2.9±0.63</td>
<td>353.3±60.65</td>
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<tr>
<td>n = 12</td>
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<tr>
<td>2nd-Trimester</td>
<td>23.0±1.8</td>
<td>1.31±0.84</td>
<td>50.7±11.6</td>
<td>1.44±0.4</td>
<td>20.56±4.3</td>
<td>23.4±1.95</td>
<td>2.9±0.34</td>
<td>305.4±11.21</td>
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<tr>
<td>n = 35</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>P&lt;0.01</td>
</tr>
<tr>
<td>3rd-Trimester</td>
<td>23.2±2.62</td>
<td>1.55±0.98</td>
<td>55.2±9.8</td>
<td>1.54±0.15</td>
<td>21.6±6.21</td>
<td>22.6±1.05</td>
<td>2.97±0.6</td>
<td>301.9±51.12</td>
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<tr>
<td>n = 70</td>
<td>NS</td>
<td>NS</td>
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<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>NS</td>
<td>P&lt;0.01</td>
</tr>
</tbody>
</table>
2. It may be due to hypernea leading to decrease in $\text{PACO}_2$ inducing constriction of bronchial muscle (7), but in our subjects, changes in RR were insignificant.

3. Decline in PEFR could be due to increased progesterone in the blood affecting expiratory muscles (6, 7).

To find out exact mechanism, we suggest simultaneous monitoring of airway resistance, $\text{PACO}_2$ and blood level of progesterone.

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REFERENCES


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