

LETTER TO THE EDITOR

PULMONARY FUNCTIONS IN PUNJABI PREGNANT WOMEN

Sir,

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Although some workers have already studied pulmonary function tests in women during pregnancy in different part of the country and abroad (1,2,3,4), but not much work has been done in Punjabi women. Therefore, the pulmonary functions of 75 pregnant and 25 non-pregnant (controls), in the age group of 18-30 years and belonging to same socio-economic status were carried out. The pregnant women (mostly 2nd gravida) were selected from antenatal clinics of various hospitals of Amritsar District, whereas non-pregnant were either the women accompanying them or visiting the Gynae Outdoor for some minor ailments.

All the women were divided into four groups consisting of 25 in each group viz G-I (1st trimester), G-II (2nd trimester), G-III (3rd trimester) and G-IV (non-pregnant control).

Four respiratory parameters viz. FVC (Forced vital capacity), FEV1 (Forced-expiratory volume in 1st second), MVV (Maximum ventilatory volume) and PEFr (Peak expiratory flow rate) were determined with computerised "Medspiror". Our results showed progressively significant or highly significant decline in FVC, FEV1 and MVV during different trimesters of pregnancy (Table I and II). Similar results have been reported by some co-workers for FVC (5), FEV1 (2, 6) and MVV (3, 6). The above decline in the 1st trimester can be attributed to morning sickness (lack of nutrition) and to lodging of trophoblast cell in the alveoli from the maternal uterine sinuses (1). Whereas in the 2nd and 3rd trimester, it may be due to mechanical pressure of enlarging gravid uterus, elevating the diaphragm and restricting the movements of lungs (1, 7) and thus hampering the

TABLE I: Showing mean and standard deviation of pulmonary function parameters.

Group Mean ± S.D.	FVC L	FEV1 L/S	MVV L/min.	PEFR L/S
Group I (1st trimester) Mean ± S.D.	2.34±0.33	2.23±0.31	97.40±17.32	6.25±1.06
Group II (2nd trimester) Mean ± S.D.	2.06±0.57	1.96±0.37	89.16±17.58	5.78±1.29
Group III (3rd trimester) Mean ± S.D.	2.18±0.34	1.97±0.26	82.0±17.58	5.08±1.45
Group IV (control) Mean ± S.D.	2.60±0.24	2.48±0.19	110.32±23.30	5.74±1.03

forceful expiration. It may also be due to bronchoconstrictor effect of decreased alveolar PCO₂ on the bronchial smooth muscles (5).

In our study, the PEFr showed non-significant decline in the 3rd trimester as reported by other workers (7). This decline can be due to increased level of progesteron in the blood leading to decrease in force of contraction of main expiratory muscles (6) and a decline in alveolar PCO₂ (caused by hyperventilation) which acts as

bronchoconstrictor (5). However, a contradictory finding, showing non-significant increase in the PEFr was observed during 1st and 2nd trimesters of pregnancy. In our view this may have been caused by the better body built, nutrition status and environmental conditions to which Punjabi women are exposed. Because the results were non-significant therefore it needs more elaborate study by increasing the number of subjects and carrying out the study on the same subjects during different trimester of pregnancy.

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