MATERIALS

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A total of 100 female asthmatic (>20% reversibility in FEV₁ after 200 μg of inhaled salbutamol) patients attending out patient department of M. L. B. Medical College, Jhansi and Vallabhbhai Patel Chest Institute, Delhi were included in the study. Consent of every patient who wanted to go for study was taken.

INCLUSION CRITERIA:

1. Should be in reproductive age groups (15-45 years).
2. All diagnosed asthmatic patients.
3. Should have regular and normal menstrual cycle.
5. Free from other pulmonary, gynecological and other systemic disease.

EXCLUSION CRITERIA:

1. Have treated for acute asthma in last two weeks.
2. Smoker.
3. Pregnant and lactating females.
4. On oral contraceptives.
5. Had regular steroids in last 3-4 weeks.

On enrolment all the patients underwent identical work up and were asked to respond the preplanned questionnaire. The questionnaire required information on asthma and relationship of the disease to menstrual cycle. The questionnaire included questions on asthma symptoms and their severity; anti asthma therapy; timing of any exacerbation in relation to menstruation and increased requirement of medication during this time; frequency with which MLA occurred; perceived severity of deterioration of asthma; regularity of menstrual cycle. Questions were asked regarding premenstrual syndrome (PMS) and any perceived relationship between severity of PMS and MLA. The severity of asthma symptoms was assessed as per the criteria adopted by Eliasson et al\textsuperscript{19} which describes as follows:

- **None (grade 0)**: meant that the patients did not have symptoms,
- **Mild (grade I)**: referred to symptoms interfering only slightly with normal actively,
- **Moderate (grade II):** meant that for patient's normal activities were interfered with but not to the extent that she missed work or school, and

- **Severe (grade III):** meant extent that she missed work, school cancelled appointment.

The following baseline investigations were carried out in each subgroup:

- **Blood:** Hb, TLC, DLC.

- **Radiology:** X-ray chest P/A view.

- **Urine:** Routive and Micriscopic examination.

- **Stool:** Micriscopic examination for ora and cys.

- **Spirometry examination:** FVC, FEV₁, FEF₂₅₋₇₅, FEV₁/FVC%.

These 100 subjects were divided into two groups after filling up the questionnaire. Group I who did not complain of any deterioration of asthma in relation to menstrual cycle and group II consists of patients presented with deterioration of symptoms in relation to menstrual cycle. Their profiles were compared.
PEFR reading:

Of these 100 patients 20 patients from each group, whose age and socio-economic status matched, were provided with peak flow meter and asked to maintain PEFR diary for two consecutive menstrual cycles. Use of peak flow meter was explained to each of patients and best of three readings were asked to be recorded in the morning and in the evening before taking anti asthma drugs. Patient were asked to continue their anti asthma drugs as prescribed and a daily record was maintained if there is extra need of the drugs. If their was emergency visit to the hospital that was also asked to record. They were asked to report every 15 days with the record. The 1\textsuperscript{st} day of menstruation was taken as day 1 of the menstruation cycle and accordingly 3 week reading were recorded for analysis. Three weeks were:

- Week I (premenstrual week): last 7 days prior to onset of menstruation.
- Week II (menstruation cycle week): 1-7 days of menstruation.
- Week III (midcycle week): day 10-16 of menstrual cycle.
The questionnaire was statistically analyzed. Independence of two attributes was compared by use of chi-square test. The PEFR between each week and each group was analyzed by student t-test. A significance level of $p < 0.050$ was accepted for all analysis.