

## SERUM LIPIDS IN CASES OF ORAL CONTRACEPTIVES

by

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Raised serum lipids and lipoprotein levels are related to the incidence of vascular disease. The use of steroid as contraceptives has raised the possibility that these synthetic hormones might change the immunity of pre-menopausal women to occlusive vascular disease. The mechanism and clinical significance of the changes of serum lipid and lipoprotein levels during oral contraceptive therapy are not understood.

The effect of oral contraceptives on the lipid metabolism has been studied by many workers. First lipid measurement reported was plasma cholesterol by PinCUS (1965). It was therefore considered pertinent to undertake a detailed study of different serum lipids in women using oral contraceptive pills for more than three months.

### Material and Methods

Forty women attending the family planning centre of Government Medical College, Nagpur, were of proven fertility of the age ranging from 15 to 40 years, belonging to parity 1 to 6 and had used oral contraceptives atleast for 3 months

were studied. The subjects were divided into 4 groups—

*Group-I:* Ten normal healthy women to act as control.

*Group-II:* Ten women using oral pills upto 6 cycles.

*Group-III:* Ten women using oral pills from 7 to 12 Cycles.

*Group-IV:* Ten women using oral pills for last 18 months or more.

All the women were using Orlest as contraceptive. Each woman had complete physical and systemic, speculum and vaginal examinations. Routine laboratory investigations such as haemoglobin estimation, routine urine examination, total and differential leucocytic count were done. Bleeding and clotting time along with indirect platelet count were done and reports of which were all normal.

At the same time venous blood was collected from each subject after 12 hours of night fast and with normal diet three days prior to collection of blood and to avoid the effect of posture on serum lipids the blood was collected after allowing the patient to remain in supine position for half an hour.

Estimation of total lipids and fractionate cholesterol, phospholipid and triglycerides were done by thin layer paper chromatography.

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### Results

(A) *Mean Total lipid levels:* A significant increase in total lipids above control values which was present during the first three cycles of use increased further during subsequent cycles (Table I).

TABLE I  
Mean Total Serum Lipid Levels in Relation to Number of Cycle

No. of Cycle	No. of Cases	Mean Serum level in Percentage with S.D.
Control	10	495 ± 115.6
3.6	10	536.6 ± 116.58
7.12	10	625.4 ± 119.37
13.18	10	625.5 ± 118.97

(B) *Mean serum Cholesterol levels:* Serum cholesterol levels showed no significant changes upto the 6 cycles, but showed significant rise as compared to control levels from 6 to 12 cycles (Table II).

TABLE II  
Mean Cholesterol Levels in Relation to Number of Cycle

No. of Cycles	No. of Cases	Percentage of mean cholesterol level with S.D.
Control	10	135.6 ± 37.19
3.6	10	143 ± 27.67
7.12	10	159 ± 30.0
13.18	10	156.75 ± 27.74

(C) *Mean serum Triglyceride levels:* There is gradual increase of serum triglyceride levels as the duration of therapy increases (Table III).

### Discussion

The hyperlipaemia observed are in agreement with results reported by other workers, Devi and Sharma (1972), Gupta and Sharma (1976). Increase in cholesterol level by 12.5% is in agreement with

TABLE III  
Mean Triglyceride Levels in Relation to Number of Cycle

No. of Cycles	No. of cases	Mean serum triglyceride level in percentage with SD.
Control	10	57.8 ± 16
3.6	10	67.4 ± 15.19
7.12	10	79.5 ± 15.74
13.18	10	81.81 ± 17.95

Jhonson and Lee (1973), Wynn *et al* (1966), while Devi and Sharma (1972); observed increase in cholesterol level by twenty per cent or more.

Increase in serum triglyceride level by thirty two per cent is in agreement with other workers Devi and Sharma (1972), Garry (1972) Sach and Wolfman (1969). The rise in total lipids and cholesterol is unexpected because if the pills used are strongly oestrogenic then the cholesterol level should decrease. However, it has been pointed out by several workers that when oestrogen is combined with progestogen the metabolic effects of the oestrogen is unpredictable. Wynn *et al* (1966) reported increase in serum cholesterol in 53 per cent of subject during contraceptive medication and decrease in 61 per cent of women after therapy was discontinued. Stokes and Wynn (1971) further observed that the most oestrogenic pills gave the highest triglyceride values and the most progestational preparation gave the highest cholesterol values. The relationship of these changes to atherosclerosis is not established yet and such changes cannot be lightly dismissed as harmless.

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The present study was conducted in the Department of Obstetrics and Gynecology, Government Medical College, Patna, Bihar, India. The study was carried out during the period from January 1973 to December 1976. A total of 1000 cases were included in the study. The study was conducted in the Department of Obstetrics and Gynecology, Government Medical College, Patna, Bihar, India. The study was carried out during the period from January 1973 to December 1976. A total of 1000 cases were included in the study.

In the present paper a study was made to study the seasonal variation (monthly variation) in deliveries and medical termination of pregnancies. The data used for the analysis were taken from the records of the department of Obstetrics and Gynecology and P.P.P. Institute of Medical Sciences, Patna, Bihar, India. The study was started in the month of April 1973. Monthly data on MTP were taken only for three years i.e. from Jan 1974 to Dec 1976. The monthly data on deliveries were taken for 4 years i.e. from Jan 1973 to Dec 1976.

Table 1 shows monthly indices of MTP and deliveries. The monthly variation of pregnancy has the highest index (124.14) in the month of April and lowest (62.27) in the month of November. The indices for deliveries are presented in Table I.

Though the hospital accommodation for patients was limited, whenever there was increased influx of delivery or MTP cases, the hospital was able to manage them. The study was conducted in the Department of Obstetrics and Gynecology, Government Medical College, Patna, Bihar, India. The study was carried out during the period from January 1973 to December 1976. A total of 1000 cases were included in the study.