

LETTER TO THE EDITOR

EFFECT OF AN ORAL CONTRACEPTIVE ON SERUM PHOSPHOHEXOSE ISOMERASE ACTIVITY

Sir,

(Received on December 2, 1982)

Use of oral contraceptives is now widely accepted, and their effects on various physiological and biochemical parameters have been extensively studied. We report here the effect of an oral contraceptive pill on serum phosphohexose isomerase (PHI) activity.

Healthy women with ages ranging from 16 to 35 years constituted the study group. Serum PHI activity was determined as described by Bondansky (1), using venous blood samples collected on 5th day after onset of menstrual bleeding. The study included 10 subjects who were regularly taking Primovlar (Schering), samples being obtained 3 times from each subject, viz., 3, 6 and 9 months after continuous use of the contraceptive. Control samples were obtained from 20 other healthy women who had never taken any oestrogen or progesterone preparation.

TABLE 1 : Serum PHI activity in control group (n=20) and in women taking Primovlar (n=10).

	Serum PHI (Bodansky units)	
	Range	Mean \pm SD
A Control group	10—38	23.4 \pm 6.6
B Primovlar (3 months)	40—86	59.6 \pm 18.4*
C Primovlar (6 months)	40—243	101.7 \pm 56.7**
D Primovlar (9 months)	61—275	151.2 \pm 64.1***

Value significantly differs from control (*P<0.001), from group B (*P<0.05) and from group C (**P<0.01).

The results are shown in Table I. Serum PHI activity in our control subjects was in the range similar to that already described for normal subjects (1), but it exceeded the upper normal limit in women taking the oral contraceptive at all observation periods. Moreover, the mean value at each observation period was significantly higher as compared to the value at the preceding observation period.

Elevation of serum glutamic oxaloacetic transaminase, glutamic pyruvic transaminase and isocitric dehydrogenase has been observed after short-term use of oral contraceptives, and has been suggested to be due to hepatocellular damage (2, 3). The rise in serum PHI may also be explained on a similar basis as this enzyme has been reported to be a sensitive indicator of hepatocellular damage (1).

USHA GUPTA*, K. P. KHUTETA* AND R. C. GUPTA**

*Departments of *Physiology and **Biochemistry,
S. M. S. Medical College, Jaipur - 304 002*

REFERENCES

1. Bodansky, O. Serum phosphohexose isomerase in cancer. I. Method of determination and establishment of range of normal values. *Cancer*. **7** : 1191-1199, 1954.
2. Jain, M., S. N. Gupta and M.L. Gupta. Liver function during short term administration of oral contraceptives in premenopausal women. *Ind. Jr. Med. Res.*, **61** : 570-571, 1973.
3. Stoll, B.A., J.T. Andrews, R. Motteram and J. Upfill. Oral contraceptives and liver damage. *Br. Med. J.*, **1** : 723, 1965.