

EFFECTS OF ORAL CONTRACEPTIVE PILL ON PROTEIN AND GLUCOSE OF VAGINAL SECRETION OF WOMEN

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SUMMARY

The young, healthy women of age group 30-35 years associated in this investigation, were divided into two categories-control and experimental. Experimental were those who were using MALA-D since 4-5 years. The Vaginal secretions were collected from women of both categories and protein and glucose concentration was estimated.

The concentration of protein was found to be increased whereas glucose was found to be decreased in the vaginal secretion of experimental women in comparison to control women.

INTRODUCTION

The overpopulation is a world-wide problem and to check it various techniques have been developed from time to time. Among different contraceptive measures employed today, the oral contraceptives

are easily and cheaply available. These are also more convenient in use in comparison to other measures for birth control. The oral contraceptives are generally hormonal in nature composed of either estrogen or progesterone or the mixture of both. These Oral pills which being used by large number of people since very long time, have reported some adverse effects on the physiology of other female organs

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and causes various types of diseases like pelvic pains and also breast Cancer (Meirik et al, 1986). With the continuous use of these drugs several adverse metabolic changes affecting carbohydrate and lipid metabolism occur which can modify biochemical processes in body tissues (Salhanick et al, 1969). Pills that contain sufficiently large amount of estrogen and progesterone act in continued negative feedback to suppress LH and FSH concentration to normal luteal phase values (Odell et al, 1967; Odell et al, 1968; Ross et al, 1966, Swerdloff and Odell 1969).

Keeping in mind the possible adverse effects even on vaginal lining it was concluded that oral contraceptives may play some role also in creating unfavourable vaginal environment. The present investigation was based on this very assumption

MATERIALS AND METHODS

The women associated during this investigation were under the age group of 30-35 years. The women were healthy and free from diseases. The women were grouped

in two categories

(i) Control those women who were not using any oral contraceptive pill, and

(ii) Experimental those women who were using Oral contraceptive MALA-D. MALA D is composed of Norgestrol and Ethinylestradiol in equal amount

The vaginal secretion was collected by the gynaecologist with the help of vaginal tampons. The vaginal tampon was kept inside vagina for 5 minutes and after removal it was kept in separate vials containing 2 ml of distilled water. The samples from both the categories of women were collected separately. The collection was done only during ovulatory and early luteal phases of the menstrual cycle. The tampons were squeezed in vials repeatedly for complete extraction of secretion. The vials were then centrifuged at 3000 r. pm for 10 minutes to separate tissue debris, present if any. The supernatant fluid was utilized for estimation of protein and glucose

The protein was estimated by the method at Lowry et al (1951) and glucose was estimated by the method of Dubois et al

Table 1
SHOWING CLINICAL DETAILS OF WOMEN
ASSOCIATED IN THIS INVESTIGATION.

Categories of women	Age Group (in years)	No. of women during ovulatory phase	No. of women during early luteal phase	Name of Oral contraceptive pills
Control	30-35	20	20	-
Experimental	30-35	20	20	MALA-D

(1956) on the Bausch and Lomb Colorimeter, Spectronic - 20.

The clinical details of women associated in this investigations are indicated in Table I.

RESULTS

The findings of this investigation are given in Table II. The table indicates the variation in the concentration of protein and glucose in the vaginal secretion of experimental women.

The concentration of protein is increased significantly ($P < 0.02$) during ovulatory phase and decreased non-significantly during early Luteal phase in experimental women in comparison to control women.

The concentration of glucose is decreased significantly ($P < 0.02$) during

ovulatory phase and during early luteal phase the decrease is highly significant ($P < 0.001$) in experimental women in comparison to control women.

DISCUSSION

As indicated in Table II, the variation in concentration of protein and glucose in experimental women is all due to effects of exogenous estrogen and progesterone which were together administered orally in the form of MALA-D. The increase in protein concentration can be further ascertained with the earlier findings at Austin and Short (1972) who reported higher protein during estrus stage of albino rats due to combined effects of estrogen and progesterone. Our finding can also be correlated with the findings of Semmens (1985) who

Table II
SHOWING EFFECT OF ORAL CONTRACEPTIVE PILL ON PROTEIN AND GLUCOSE IN VAGINAL SECRETION OF WOMEN

Phase of menstrual Cycle	Concentration in mg/100ml, Mean + S.E.			
	Protein		Glucose	
	control	Experimental	Control	Experimental
Ovulatory		++		++
	11.453	13.294	15.052	9.909
	+ 1.141	+ 0.448	+ 4.215	+ 0.729
Early luteal		Ns		+++
	11.195	10.132	17.510	9.196
	+ 0.399	+ 0.384	+ 0.527	+ 1.049

P Value - +++ H.S. ($P < 0.001$) ; ++ S($P < 0.02$)

reported that exogenous estrogen administration increases the blood flow in vaginal lining resulting into increase of transudation. This increased transudation is responsible for increase in the protein concentration.

The concentration of glucose, as indicated in Table II, is decreasing in case of experimental women. This decrease in concentration can be correlated with the earlier findings of Gregoire et al (1971) who reported that in case of human vaginal estrogen mediates its effect on the vaginal epithelium either through a more rapid turn over of glycogen into glucose or lactic acid and oxidation of glucose or by proliferation and growth of vaginal epithelial cells. So it might be the basic factor for decrease in glucose concentration in vaginal secretion of experimental women. Furthermore Spellacy (1982) also have reported about the adverse effects of oral contraceptives on the carbohydrate metabolism.

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