

ROLE OF SERUM PROGESTERONE IN CASES OF THREATENED ABORTION

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SUMMARY

Threatened abortion is a clinical dilemma with an anxious demand by the patient about the outcome of pregnancy. Serum progesterone assay in cases of threatened abortion has a prognostic value. Majority of women who have a defective ovum or go in for spontaneous abortion have serum progesterone level below 15 ng/ml irrespective of the age of gestation and do not follow the normal rising pattern appropriate for the gestational age. Molar pregnancy shows a two fold rise in the level of serum progesterone for any age of gestation.

INTRODUCTION

Abortion is a most distressing condition. The seriousness of its impact on the couple is however frequently passed over by the clinician, uneasy in the knowledge, that in majority of the cases, it is virtually impossible to diagnose the cause and prescribe specific therapy. Progesterone which is elaborated in very large quantities during pregnancy is known to play a key role in the maintenance of pregnancy. It is

postulated that corpus luteum bears the main bulk of progesterone production in the first trimester.

MATERIAL AND METHOD

The present study was conducted over a period of one year on 106 patients carrying pregnancy between 6-20 weeks and presenting clinically as cases of threatened abortion. 54 women with normal pregnancy of similar gestation age were taken as control. A detailed clinical history of the patient was recorded. Menstrual history was recorded in detail so that patients with irregular

menstrual cycles were excluded from the study. LMP was correctly recorded as far as possible 10ml of blood was collected and processed in the laboratory by radioimmuno absorbant technique.

OBSERVATION

Table I shows the serum progesterone values in the control population and the study group of cases which progressed to the age of viability.

Of the 106 patients of the study group, 63 cases progressed to the age of viability and 17 cases were of missed abortion, 24 of spontaneous abortion, 18 of blighted ovum and 4 of vesicular mole.

The mean serum progesterone concentration increased gradually from 17.13 ng/ml at 6 weeks of gestation to 22.45 ng/ml at 8 weeks of gestation and dipped slightly to 18.22 ng/ml at 9 weeks of gestation. The serum progesterone value was 24.84

Table I
SERUM PROGESTERONE VALUES IN THE CONTROL POPULATION AND THE STUDY GROUP OF CASES WHICH PROGRESSED TO THE AGE OF VIABILITY.

Weeks of gestation	Control Group		Study group of cases progressing to the age of viability	
	Mean	Range	Mean	Range
6	17.13	16.07 - 18.18	-	-
7	19.29	16.51 - 21.78	-	-
8	22.45	15.25 - 30.94	21.74	14.52 - 28.74
9	18.22	10.74 - 24.79	16.39	12.91 - 21.52
10	24.84	17.31 - 32.71	22.19	15.42 - 27.15
11	25.04	18.92 - 26.41	-	-
12	29.75	24.81 - 36.71	28.90	22.72 - 30.42
13	30.05	25.41 - 34.11	29.14	29.14
14	32.16	22.99 - 34.98	30.90	21.74 - 32.41
15	33.66	22.44 - 42.96	-	28.94 - 35.5
16	34.52	34.52	33.14	53.14
17	-	-	34.81	33.92 - 35.71
18	40.92	40.92	38.82	34.71 - 44.15
19	44.51	44.51	43.00	36.72 - 48.41
20	51.04	44.53 - 57.55	51.78	48.31 - 55.71

ng/ml at 10 weeks. It then continued to rise to double its value to 51.04 ng/ml at 20 weeks.

In the study group of cases which progressed to the age of viability the serum

of the cases of spontaneous abortion 21/24 cases (87.5%) the mean serum progesterone concentration was below 15 ng/ml irrespective of the period of gestation.

In cases of missed abortion and blighted

Table II
SERUM PROGESTERONE CONCENTRATION IN THE STUDY GROUP WITH AN UNFAVOURABLE OUTCOME

SERUM PROGESTERONE CONCENTRATION (ng/ml)

Weeks of gestation	Missed abortion n = 17	Spontaneous abortion n = 24	Blighted ovum n = 18	Vesicular mole n = 4
6	8.01	13.75	3.21	
7		13.46		
8	7.91	14.7	6.31	
9				
10	10.18			
11		8.94	8.04	
12	7.32	10.62	7.28	62.21
13			7.16	
14	11.58	3.59		
15		9.17		
16		12.12		
17		12.21		
18	12.54	12.03		
19				
20	12.58	41.51		77.97

progesterone values were seen to be slightly on the lower side as compared to the mean value of the control population.

Table II shows the serum progesterone concentration in the study group. In majority

ovum the values were below 10 ng/ml irrespective of the period of gestation. The serum progesterone level at any gestation age showed a two fold rise in cases of vesicular mole.

DISCUSSION

Progesterone acts to effect secretory changes in the endometrium which are believed to be optimal for the implantation of the blastocyst.

The function of corpus luteum begins to decline by 6 weeks of gestation and by 8 weeks of gestation the maternal trophoblast gradually takes over the function and synthesises progesterone with the help of cholesterol esters through pregnenolone as intermediate.

In the control population of the present study the mean serum progesterone concentration showed a gradual rise from 17.13 ng/ml at 6 weeks of gestation to 51.04 at 20 weeks. A dip in the value was observed at 9 weeks (18.22 ng/ml). A comparative table of serum progesterone levels in normal pregnant women is shown in table III. Johansson (1969) suggested that the fall in the level of serum progesterone might be explained by the fact that the site of production of progesterone changes from the corpus luteum to the placenta

by about 9 weeks. Our study also shows similar results. We also observed that in cases of threatened abortion which progressed to the age of viability, their mean serum progesterone levels were corresponding to the mean serum progesterone concentration of the control population for the respective age of gestation (Table I). 87.5% of the cases of spontaneous abortion whose other fetal growth parameters were within normal limits, but who had a low serum progesterone concentration, aborted.

Radwanska et al (1978) reported that patients with threatened abortion, whose pregnancy continued, had their values of serum progesterone not significantly different from those of normal pregnancy. Cases of threatened abortion which had an unfavourable outcome as defective ovum or spontaneous abortion, had the levels markedly low as reported by Radwanska (1978) and Nygren et al (1973). In the non-abortion group 87% of the

Table III
COMPARATIVE TABLE OF SERUM PROGESTERONE
LEVELS IN NORMAL PREGNANT WOMEN AT 6 WEEKS,
9 WEEKS AND 20 WEEKS OF GESTATION

	PLASMA PROGESTERONE CONCENTRATION (ng/ml)		
	6 weeks	9 weeks	20 weeks
Johansson (1969)	21.3	16.7	52.3
Teoh et al (1973)	15.1	18.8	72.5
Our study	17.13	18.22	51.04

women had levels of serum progesterone 10 ng/ml of plasma or higher while 80% in the abortion group has a concentration below this level.

In molar pregnancy the level of serum progesterone showed a two fold rise for any gestational age.

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MID TRIMESTER TERMINATION OF PREGNANCY WITH EXTRA AMNIOTIC PGF 2 ALPHA AND A COMPARATIVE STUDY WITH NORMAL SALINE AND IODINE SALINE

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SUMMARY

200 patients were selected for mid trimester termination. 100 patients received extra amniotic prostaglandin, 50 patients normal saline and another 50 patients iodine saline by extra amniotic route. The results were analyzed. The mean induction abortion interval with EAPG was found to be much less (17.38 hours). The success rate was 95% (the need for oxytocin infusion for augmentation of abortion was less (25%) as against 80% and 70% with EANS and EALS. The latter cases responded with retabulation. The side effects were less and there were no fetal complications.

had a safe, efficient and reliable method for inducing second trimester abortion. An ideal method should be one which is simple in technique with least induction - abortion interval and should not cause any maternal side effects.

AIM OF THE STUDY :

Aim of the study was to evaluate the efficacy of 13 (2) Methyl PGF 2 alpha

TERMINATION OF SECOND TRIMESTER PREGNANCY WITH EXTRA AMNIOTIC PGF 2 ALPHA AND A COMPARATIVE STUDY WITH NORMAL SALINE AND IODINE SALINE

This study was conducted in the Department of Obstetrics and Gynecology, Government General Hospital, Bangalore, India.