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**TITLE**

Sex hormone studies by radioimmunoassay in pregnant and non-pregnant women and in women treated with hormonal contraceptives

**FINAL REPORT FOR THE PERIOD**

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#### ADDITIONAL REPORT RC COL 1722

The present work was done with the purpose of establishing our normal profiles for progesterone,17 OH Progesterone, Estriol and Human Chorionic Gonadotropin during the first trimester of pregnancy. Being this the period during which most of the spontaneous abortions occur, it is very important for a laboratory to have the possibility to assess the performance of the corpus luteum and the Feto-placental unit.

#### MATERIALS AND METHODS:

The subjects of the study were 10 apparently healthy pregnant patients who came to the Military Hospital obstetric clinic. 1.5 ml plasma samples were obtained on a weekly basis from weeks 6-12 for the determination of Progesterone,17 OH Progesterone, Estriol and HCG.

The procedures by which these hormones were measured, had been described in detail in our final report to the IAEA on January 1980.

Briefly the steroid standards were obtained from E Merck Darmstadt and the HCG standard from the MRC London.

The tritiated steroids were all obtained from the New England Nuclear and the HCG for labeling was the CR 119 preparation, supplied by the NIH.

The antiserum against Progesterone was obtained in our laboratory. The anti Estriol was a gift from Dr Lynn Loriaux (NIH Bethesda ). The anti HCG was a gift from Dr R Ryan (Mayo Clinic) and the 17 OH Progesterone antiserum a gift from Dr Rivarola (Hospital for Children Buenos Aires).

The antiprogestosterone and anti 17 OH Progesterone antiserums have a 2.8% cross reaction between them.

The second antibody (goat anti rabbit) was also obtained in our laboratory.

The radioimmunoassays for progesterone, 17 OH Progesterone and Estriol were done as described by Abraham (1) and Stafford and Watson (2).

The HCG Iodination was performed by the Chloramine T method of Greenwood and Hunter (3) and its RIA by the method of Midgley et al (4).

#### RESULTS:

The individual as well as the mean values for Progesterone, 17 OH Progesterone, and Human Chorionic Gonadotropin are listed on tables 1, 2 and 3 and plotted in figures 1, 2 and 3 respectively. The bars in these figures represent the standard error of the mean.

The Estriol, as expected, was undetectable during this period of pregnancy and with the method that was in use in our laboratory by the time this work was done.

The values obtained for progesterone from weeks 6-12 are well above those of the luteal phase (1500 ng/dl for our laboratory) with a slight decrease by the 9<sup>th</sup> week, which correlates well with what is reported in the literature.

The 17 OH Progesterone showed a relatively constant profile throughout the study and the mean values are quite similar to those found by us in normal women during the luteal phase. The HCG rose sharply as early as by the time of the first missed menstruation, reaching a peak at the 9<sup>th</sup> week and then declining to values around 4000 miu/ml.

17 OH PROGESTERONE NG/DL

PATIENT #	Weeks of Pregnancy						
	6	7	8	9	10	11	12
1	629	596	679	662	629	600	680
2	650	580	648	639	568	624	620
3	609	543	619	601	582	598	576
4	621	569	584	534	550	559	548
5	596	521	590	548	539	600	588
6	711	640	642	630	594	636	612
7	604	556	609	584	563	614	598
8	593	531	556	540	554	601	596
9	623	564	576	521	488	524	581
10	561	520	545	550	491	489	503
$\bar{x}$	626.70	562	604.8	580.9	555.8	584.5	590.2
SEM	14.96	11.75	13.50	15.73	13.77	14.7	14.61

Fig. 2

HUMAN CORIONIC GONADOTROPIN HCG -MIU/ML

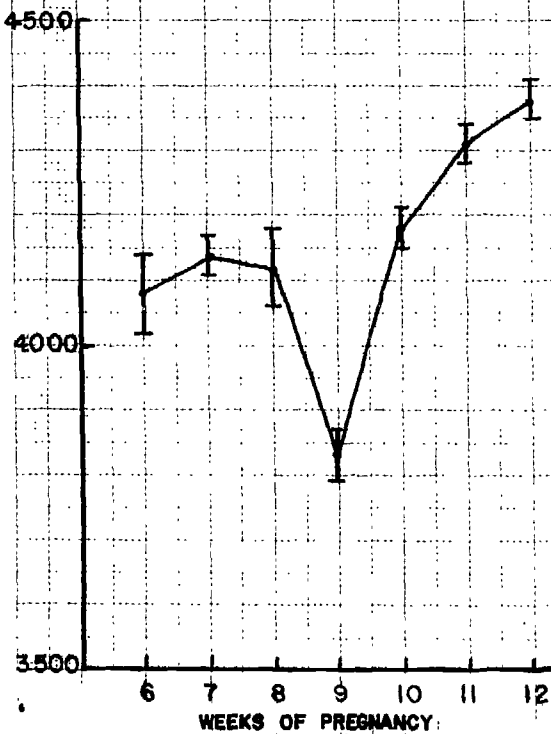
PATIENT #	W e e k s o f P r e g n a n c y						
	6	7	8	9	10	11	12
1	3400	4309	4893	5704	5119	4306	4339
2	3208	4618	5012	5650	5412	4291	4184
3	3125	4225	4804	5521	5318	4408	4314
4	3349	4631	4721	5658	5209	4426	4518
5	3450	4618	5032	5413	5301	4504	4302
6	3124	4129	4944	5316	5000	4021	4048
7	3500	4406	4601	5221	5149	4208	4124
8	3043	4079	4408	5284	5031	3946	3827
9	2908	4119	4318	5314	4908	4124	4200
10	3421	4512	4996	5603	5123	4203	3986
$\bar{x}$	3252.8	4364.6	4772.9	5468.4	5157.0	4243.7	4184.2
SEM	62.99	79.86	81.04	56.83	49.39	56.72	62.84

Fig. 3

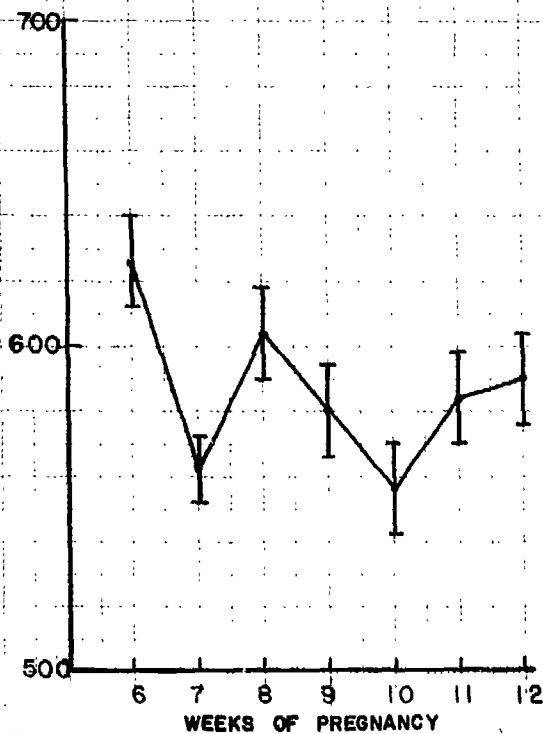
R E F E R E N C E S

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PROGESTERONE  
ng/dl



17 OH PROGESTERONE  
ng/dl



HCG MIU/ml

