CHAPTER 3

RESULTS

1. Serum Levels of Luteinizing Hormone (LH), Estradiol (E_2); Progesterone and Prolactin in Normal Cycling Monkeys.

As shown in Fig. 1, all five females exhibited the typical preovulatory surges of LH (range 176 - 343 ng/ml.) preceeded or accompanied by E_2 surges (0.8-1.3 nmol/L. There was no cyclic change of serum prolactin Levels which fluctuated between 109 - 244 mU/L. throughout the entire peroid of the cycle. The mean cycle length was 29 days (28 - 32 days) as the follicular phase varied from 9 - 14 days while the luteal phase lasted 12 - 15 days.

2. Serum Levels of Luteinizing Hormone (LH), Estradiol (E_2), Progesterone and Prolactin in Galactorrhea Monkeys.

From five galactorrhea monkeys, it could be devided into two groups as follows :

2.1 Those exhibited regular cycle. This group consisted of three monkeys; monkey # 74, monkey # 24 and monkey # 29. The cycle length averages were 31 days, 24 days and 30 days for monkeys # 74 monkey # 24 and monkey # 29 respectively (as shown in fig. 8, graph 2, 3 and 4)

Monkey # 74 (fig. 8, graph 2) showed the E_2 peak at mid cycle of 1.1 nmol/L. LH surge of 84 ng/ml. and luteal phase elevation of progesterone lasted for 20 days and reached the peak of 35.9 nmol/L. Similar hormonal patterns were found in monkey # 29 (fig. 8, graph 3)

showed E_2 peak of 1.1 nmol/L. LH surge of 66 ng/ml. and luteal phase elevation of progesterone lasted from 15 days and reach the peak of 28.0 nmol/L.

Monkey # 24 (graph 4) in spite of regular menstrual cycle, showed different patterns of hormonal profile. It exhibited the LH surge of 91 ng/ml. on Day 15 of the cycle but there was no E_2 surge. Luteal phase of progesterone reached the highest peak of only 14.8 nmol/L. and lasted for 9 days.

It is of interest that serum levels of prolactin in all monkeys in this group were about three times higher than in the control group ranging from 290 to 748 mU/L. in monkey # 74 and from 315 - 693 mU/L in monkey # 29 and from 357 - 780 mU/L in monkey # 24.

2.2 Irregular cycle group. As shown in Fig. 9. The rest two galactorrhea monkeys, monkey # 11 and monkey # 58 were found to show the peroids of menstrual absence and recurrence as well as prolonged cycles. As the studies began, they both had the peroids of menstrual disappearance of over 100 days. There was neither E_2 nor LH peak and serum levels of progesterone found as low as less than 1.0 nmol/L. throughout the peroid of 100 days. However, as in previous group, serum prolactin levels were high, ranging from 197 - 1154 mU/L. in monkey # 11 and from 154 - 521 mU/L. in monkey # 58.

3. Effects of Bromocryptine on Serum Levels of Luteinizing Hormone (LH), Estradiol (E_2), Progesterone and Prolactin in Galactorrhea Monkeys.

As for monkey # 74, the effect of bromocryptine treatment on hormonal patterns is indicated in Fig. 10. Bromocryptine administration was initiated on day 2 of the cycle and stopped on day 5 of the

following cycle for as long as 30 day treatment. During this therapeutic peroid, there was no changes in patterns of LH, E_2 and progesterone as compared to the control group. It also exhibited preovulatory surges of LH and E_2 at the level of 96 ng/ml. and 1.45 nmol/L. respectively. Progesterone in luteal phase was reached the highest peak of 22.9 nmol/L. with the length of this phase was 17 days. After bromocryptine withdrawal, these hormonal patterns seemed to be unchanged, for showing the preovulatory surges of LH and E_2 (78 ng/ml. and 1.35 nmol/L. respectively) as well as the increasing of progesterone after the surges of LH and E_2.

The major hormone to spend special noticement in this study is prolactin. Prolactin was shown the dramatically decrease from 564 mU/L. to 160 mU/L. within two hours after the first dose of drug administration, and serum prolactin levels remained persistently low of 234 $\pm$ 36 mU/L. throughout the therapeutic peroid of 30 days. After bromocryptine withdrawal, serum prolactin was then increased to the high level as the level before drug treatment with the range from 371 mU/L. to 586 mU/L. in the 12 days of post-therapeutic peroid.

Even the decrease in serum prolactin during treatment, this monkey had still shown persistent profuse galactorrhea from both breast, but in reduction of amount.

Similar results were obtained in monkey # 29 (Fig. 10, graph 2) # 24 (graph 3), monkey # 11 (graph 4) and in monkey # 58 (graph 5); and we can found that, even the day of menstrual cycle on which the initiation of bromocryptine treatment were occured, as day 14 in monkey # 29, day 23 in monkey # 24, day 2 in monkey # 11 and day 37 in monkey # 58; the hormonal patterns of LH, E_2 and progesterone were

unchanged in each individual.

However, in all cases, the changing of serum prolactin levels during bromocryptine treatment period were also remarkable noticed as in monkey # 74 of sudden declination and remaining low level in this peroid, and then of rapid increasing after drug withdrawal to the high levels, as before in each one. Galactorrhea reduced and disappear not later than on day 15 of treatment in all monkeys, except for monkey # 74, but having the recurrence of galactorrhea within the first day of bromocryptine withdrawal.

4. Effects of Bromocryptine on Fertility in Galactorrhea Monkeys.

During the peroid of three months of bromocryptine treatment, 3 out of 4 treated monkeys showed the entirely disappearance of galactorrhea within the second week of the therapeutic peroid. The only one monkey (monkey # 74) failed to stop galactorrhea completely, the amount of milk secretion could be observed; however less. They were put with healthy males during every mid-cycle peroid to persume mating and pregnancy, as shown in Fig. 3 for monkey # 74, in Fig. 4 for monkey # 29, in Fig. 6 for monkey # 11 and in Fig. 7 for monkey # 58. They all showed the improvement in their mating behaviours of higher receptivities throughout the 3 month peroid of treatment. But none of them were found to have successful mating and pregnancy.

FIGURE 8. Serum levels of LH, E_2, progesterone and prolactin of control female group (n = 5) and 3 galactorrhea monkeys in the regular cycle group

GRAPH 1. normal control cycling group (n = 5)

GRAPH 2. galactorrhea monkey # 74

GRAPH 3. galactorrhea monkey # 29

GRAPH 4. galactorrhea monkey # 24

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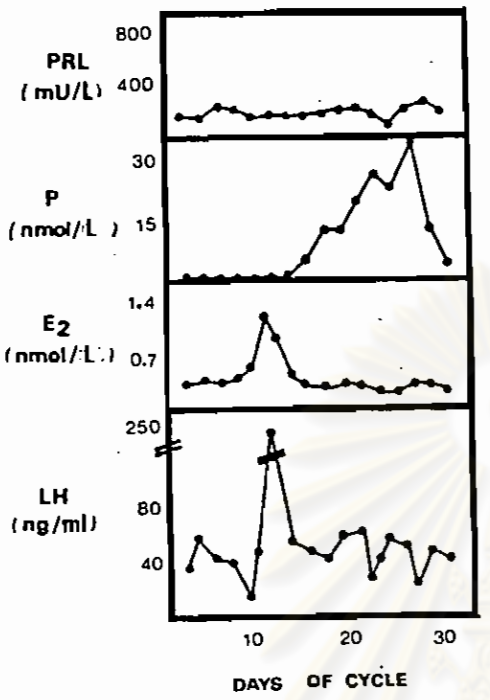
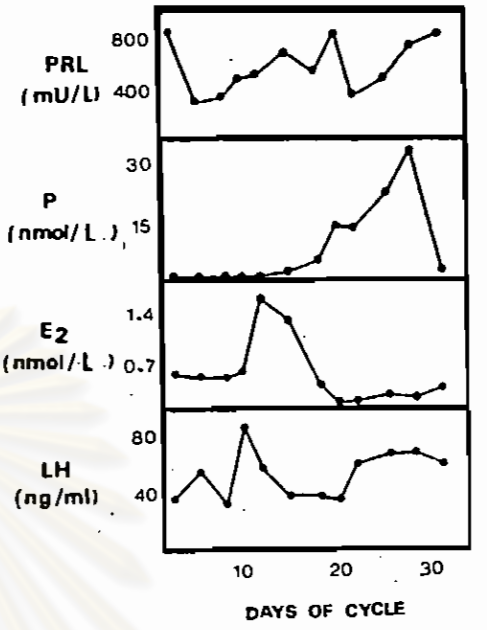
Control group

GRAPH 1

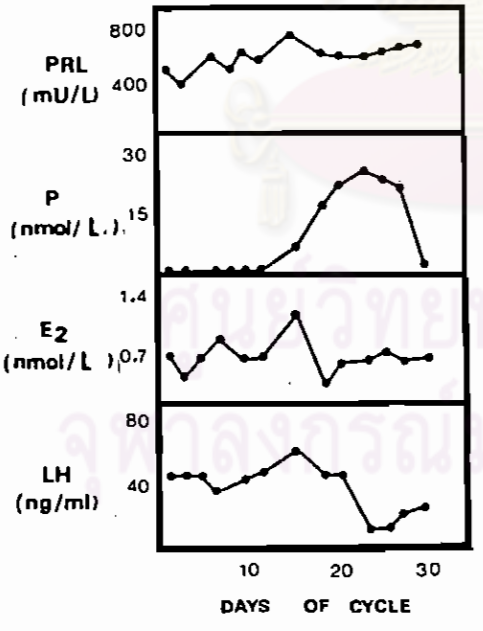


Monkey # 74

GRAPH 2

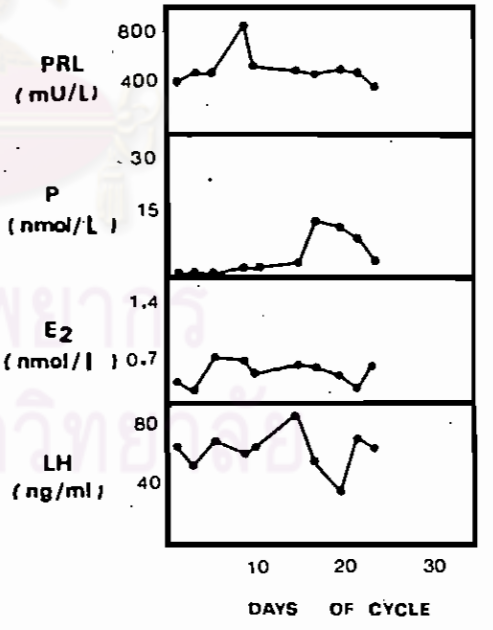


Monkey # 29



GRAPH 3

Monkey # 24



GRAPH 4

FIGURE 9. Serum levels of LH, E_2, progesterone and prolactin of 2 galactorrhea monkeys in the irregular cycle group

GRAPH 1. galactorrhea monkey # 11

GRAPH 2. galactorrhea monkey # 58

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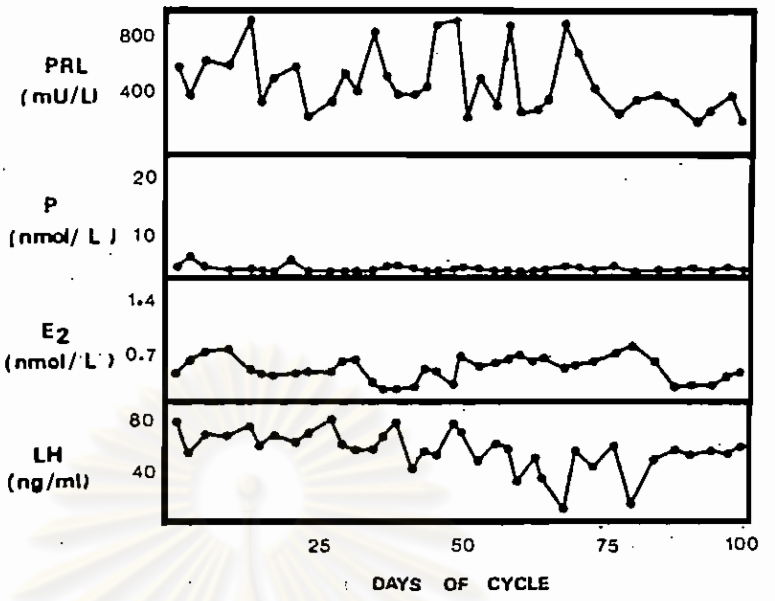
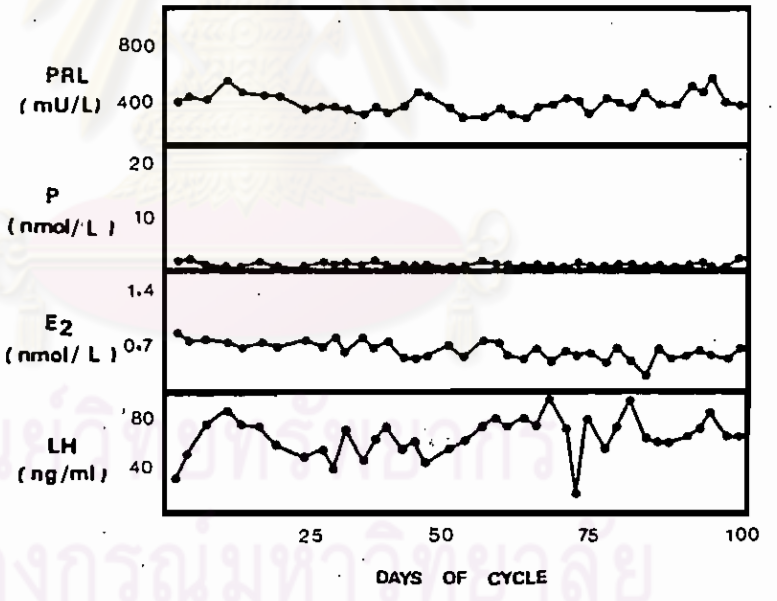
Monkey # 11



GRAPH 1

Monkey # 58



GRAPH 2

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FIGURE 10. Serum levels of LH, E_2, progesterone and prolactin during 30 days of bromocryptine treatment in 5 galactorrhea monkeys

GRAPH 1. galactorrhea monkeys # 74

GRAPH 2. galactorrhea monkeys # 29

GRAPH 3. galactorrhea monkeys # 24

GRAPH 4. galactorrhea monkeys # 11

GRAPH 5. galactorrhea monkeys # 58

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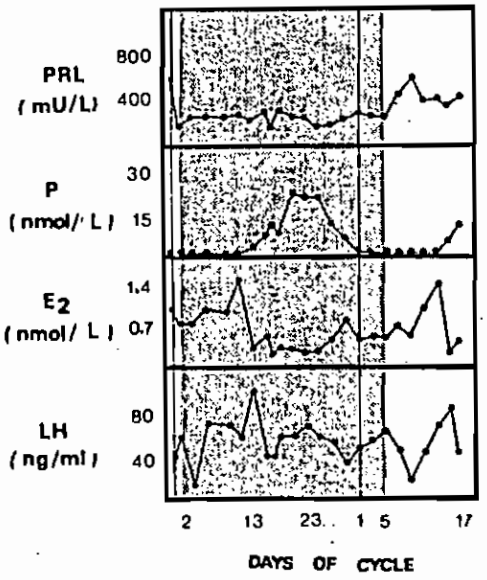
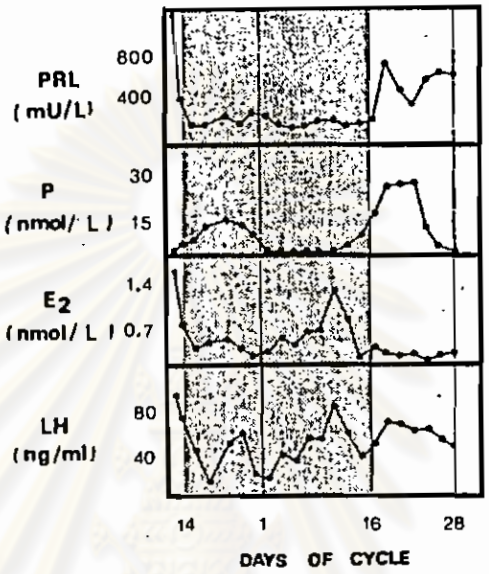
Monkey # 74

GRAPH 1



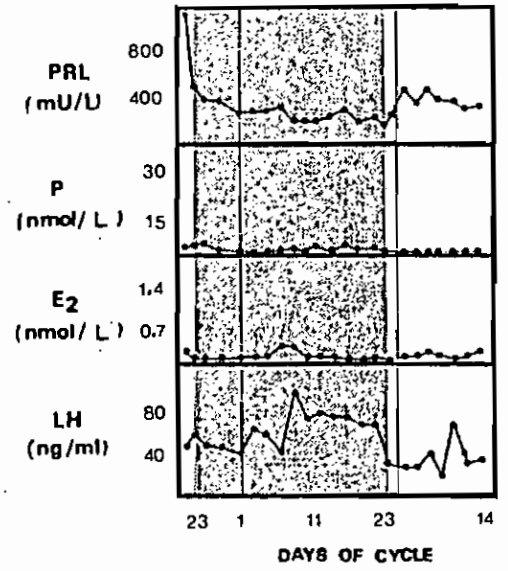
Monkey # 29

GRAPH 2

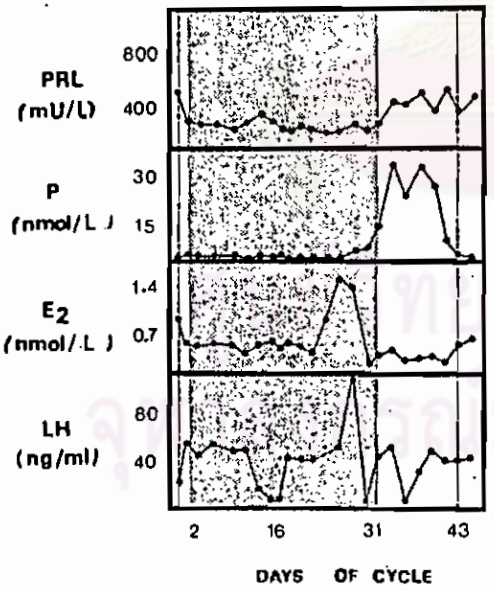


Monkey # 24

GRAPH 3

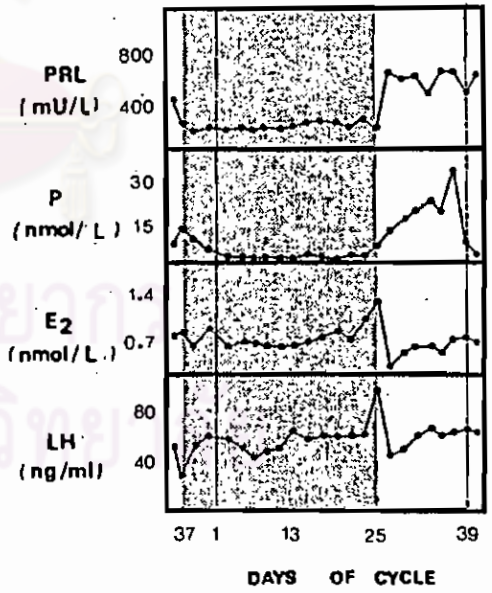


GRAPH 4



Monkey # 11

GRAPH 5



Monkey # 58