

THE ROLE OF PURE FSH IN CONTROLLED OVARIAN STIMULATION

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SUMMARY

Patients with polycystic ovarian disease present as a challenge at times of ovulation induction. This stimulation protocol has advantages of lowering cost, decreases chances of hyperstimulation and having acceptable pregnancy rates with low incidence of miscarriage. 23 women with documented PCOD underwent the low dose protocol of pure FSH. 23 women had 30 cycles. Successful ovulation was observed in 83% of the cycles (25/30 cycles.) None of the cases showed hyperstimulation. Clinical pregnancy rate was 30% / cycle (9/30 cycles) and 39% / Patient (9/23 patients). Multiple pregnancy rate was 22.2% / patient (2/9 patients).

INTRODUCTION

Patients with PCOD present as a difficult problem at the time of ovulation induction, where no single method has emerged as the treatment of choice. In PCOD the cyclic pattern of FSH.LH is absent. LH is high as opposed to a relatively constant or low FSH. Such patients benefit the most by this protocol.

This theory emulates Brown's theory which states that each ovary has a threshold requirement of FSH, below which follicular development does not occur and above which normal rates of follicular growth are seen. New follicles are recruited as long as the FSH level remains above the threshold. Below the threshold no new follicles are recruited, only those that have started will continue to do so.

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MATERIAL AND METHODS

23 women with documented PCOD underwent 30 cycles of ovarian stimulation with the low dose protocol of pure FSH. Documentation was by ultrasound, hormonal profile and by clinical observation of absence of ovulation.

All women had received at least 6 cycles of clomiphene citrate & 2 cycles

of conventional gonadotropin therapy with none reporting pregnancy.

Inj pure F.S.H. 37.5 I.U. was administered intramuscularly daily from day 5 for 7 days. The dose was increased every seven days until there was evidence of active follicular development, i.e. follicle of > 10 mm. is seen and there was an increase in the thickness of the endometri-

Table I

Amps/cycle	Days of stimulation	Ovulation Rate	No. of follicles	Hyperstim
2-19.5	4-28	25/30	1-3	None
Mean	Mean			
11.3	16.5	83.3%	1.4	

Table II

	Low dose Shoham	Conventional Protocol	Low dose J. H. R. C.
FSH Amps	8.5 - 40	8 - 39	2 - 19.5
Mean	14.5	20	11.3
Days of stimulation	10 - 30	7 - 25	4 - 28
Mean	13	12	16.5
No. of Follicles	1 - 3	1 - 7	1 - 3
Mean	1	5	1.4
E2 on day of hCG	528 - 4700	902 - 11000	-
Mean	1539	4050	-
hCG given	All	10/13	All

um. 10,000 i.u. of hCG was given if no more than 3 follicles had developed to 17mm or more. The frequency of monitoring was restricted to once a week until there was evidence of active follicular development. Once follicular development was perceived then ultrasound was performed every 2 days.

Table I shows the results of our study. The mean number of ampoules required of pure FSH per cycle were 11.3. The mean number of days of stimulation were 16.5. The ovulation rate was 83.3%. The mean number of follicles obtained were 1.4 most of our cycles were monofollicular. None of the cycles showed hyperstimulation.

Clinical pregnancy was seen in

9/30 cycles 30% / cycle
9/23 patients 39.1% patient

Multiple pregnancy was seen in

2/9 patients 22.2% / patient

of the 9 pregnancies

7 were singleton
4 went on to term
1 is on going
2 miscarried.

DISCUSSION

Comparison of our results with the low dose protocol of Shoham and the conventional protocol is shown in Table II.

The low dose protocol of pure FSH for ovulation induction appears to be more physiological, as it corrects the mildly suppressed FSH, suppresses the high LH concentration in the late follicular phase of the cycle. It permits reduced frequency

of monitoring and enables us to find the threshold for a single follicle to develop with reasonable estradiol levels at the time of ovulation. This allows the administration of hCG in all the cycles. In the conventional protocol of Shoham hCG was given only in 10/13 patients, while in the low dose protocol it was feasible to administered hCG to all the patients. In our study hCG was administered to all the patients. None of the patients hyperstimulated. The incidence of hyperstimulation is much lower in the low dose protocol as compared to the conventional protocol. The No. of ampoules of pure FSH required per cycle. are few, thus making the protocol very economical to the patient. The incidence of multiple pregnancy is lower as most of cycles are monofollicular.

CONCLUSION

The use of the low dose protocol has avoided the well known complications of ovulation with the gonadotropins in PCOD patients i.e. high serum LH levels at the time of maximum follicular growth, excessive serum estradiol level, multiple follicular growth and hyperstimulation syndrome were avoided. This protocol cuts cost, has higher pregnancy rates, lower miscarriage and multiple pregnancy rate. This protocol requires patience on the part of the doctor and patients. Thus this protocol should prompt all of us to reconsider and probably replace the conventional gonadotropin therapy with this new modality.