

Research Article

Comparative analysis of Yoga and clomiphene in infertile women

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ABSTRACT

Objective: To compare the efficacy and adverse effects of yoga and clomiphene on infertile women. **Design:** Prospective study. **Setting:** Infertility clinic of a tertiary care referral centre. **Patients:** 60 infertile women. **Intervention:** Eligible women were equally randomized into two groups, group I (yoga) and group II (clomiphene). Group I practiced yoga daily for six months, group II was given clomiphene for three cycles. Comparative analysis was made among both the groups. **Result:** ovulation occurred after three months of yoga in group I, compared to group II where ovulation was observed in first month. 46.6% vs 33.3% women conceived in group I and group II respectively. All pregnancies in group I crossed the period of viability but in group II, 50% crossed the period of viability. Women in group I reported feeling stronger and more confident whereas in group II, nausea was complained by 33.3% women, 26.6% women complained of headache and woman 6.6% had abdominal distension and bloating during the study. **Conclusion:** Though the results of yoga are comparable to clomiphene, the number of viable pregnancies are more and without any adverse effects by yoga therapy.

Keywords: Yoga therapy, Clomiphene, Infertility

INTRODUCTION

Infertility creates devastating psychological consequences on infertile couples and remains a worldwide problem challenge. Conventional infertility treatment can cause whole range of problems, including painful side effects, financial strains and emotional stress. Extreme stress can affect hormonal balance which is definitely a problem when a woman is trying to conceive. Infertile women may have profound psychological effects and becomes more anxious to conceive, increasing their sexual dysfunction [1]. Women trying to

conceive have clinical depression rates similar to women who have heart disease or cancer [2].

In the reproductive system, hypothalamus produces GnRH which stimulates the pituitary gland to produce the peripheral hormones, luteinizing hormone and follicle stimulating hormone which in turn stimulates the production of testosterone, estradiol and sexual behavior. Stress makes the adrenal gland produce glucocorticoids which acts directly on hypothalamus to suppress GnRH production and also boost hypothalamic gonadotropin inhibitory hormone (GnIH) production, which acts to reduce

hypothalamic GnRH as well as pituitary secretion of sex hormones, thereby suppressing the entire reproductive system [3]. Yoga can act as an antidote to the harmful effects of stress hormones by decreasing the blood levels of cortisol, ACTH, norepinephrine and epinephrine and restoring the optimal reproductive health [4].

Clomiphene is the selective estrogen receptor modulator that also acts on hypothalamus by binding E2 receptors and thereby creating a state of hypoestrogenicity, this upregulates the hypothalamic-pituitary-ovarian axis.

Since yoga and clomiphene both acts on hypothalamus to restore optimal reproductive axis, we conducted a small study to compare the effects of Yoga and clomiphene in infertile women.

Aims and objectives

To compare the efficacy and adverse effects of yoga and clomiphene in infertile women.

Methods

A prospective randomized study was conducted over a period of one and half year, where infertile women between 20 to 35 years were selected from our infertility clinic.

Inclusion criteria:

Women who gave the consent to participate in the study till the completion.

History of oligomenorrhea, hypomenorrhea or amenorrhea.

Normal thyroid function tests, Prolactin, HSG and semen analysis.

D2 TVS indicating PCOS or normal study.

Endometrial biopsy not suggestive of tuberculosis.

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Exclusion criteria:

Women with any medical disorders (diabetes, hypertension, epilepsy, asthma etc.) or past surgeries.

Previous stimulated cycles.

Eligible 60 women were randomized equally into two groups, group I (yoga) and group II (clomiphene).

Group I practiced yoga for 45-50 min daily for six months in our Yoga centre including holidays. Women were taught 5 exercises - Lotus pose meditation (Padmasana), Bridge supporting pose (Setu Banha Sarvangasana), Cobra pose meditation, Cobbler's pose and legs up the wall pose.

Group II was given clomiphene 50-100 mg for 5 days starting from D2-3 for three cycles. TVS was done on Day 12 to observe dominant follicle and serum progesterone was done on day 21. Timed intercourse was explained.

Comparative analysis was made for restoration of normal menstruation, ovulatory rates, conception rates and adverse effects among both the groups.

RESULTS

Normal menstrual cycle was restored in 10 (66.6%) women after 3 months of yoga in group I and none in group II.

In group I, ovulation was documented after 3 months of yoga and maximum number being in fifth month 15 (50%) compared to group II where ovulation was observed in first month, maximum number was in second month 11(36.6%)(Table 1).

14 women (46.6%) vs 10(33.3%) women conceived in group I and group II respectively, however conception occurred in fifth month of yoga in group I as compared to conception in second month in group II (Table 2).

Table 1: Ovulatory rates

Months	Group I (yoga)	Group II (clomiphene)
Ist	0	6 (20%)
IIInd	0	11(36.6%)
IIIrd	0	9 (30%)
IVth	12 (40%)	0
Vth	15 (50%)	0
VIth	8 (26.6%)	0
Total	30	30

Table 2: Conception rates

Months	Group I	Group II
Ist	0	0
IIInd	0	6 (20%)
IIIrd	0	4(13.6%)
IVth	0	0
Vth	10 (33%)	0
VIth	4 (13.3%)	0
Total	30	30

Table 3: Comparative analysis of Group I and Group II

Duration of marriage	Group I			p-value	Group II			p-value
	Ovulated	Conceived	Total		Ovulated	Conceived	Total	
<5 yr	2(25%)	0	8	0.1429 (NS)	8 (100%)	6 (75%)	8	0.1429 (NS)
5-10 yr	12 (75%)	6 (50%)	16	1.000 (NS)	10(62.5%)	2 (25%)	16	0.321 (NS)
>10 yr	6 (100%)	6 (100%)	6	0.1000 (NS)	0	0	6	0.1000 (NS)

All women in group I crossed the period of viability but in group II, 5(16.6%) woman had ectopic gestation, 10 (33.3%) had spontaneous abortion and only 15(50%) crossed the period of viability.

It has been observed that fertility yoga was fruitful in women having long duration of married life and clomiphene was beneficial in couples having married life less than 5 years (Table 3).

Women in group I reported feeling stronger, more confident and powerful whereas in group II, nausea was complained by 10 (33.3%) women, 8(26.6%) women complained of headache and 2 woman (6.6%) had abdominal distension and bloating during the study.

DISCUSSION

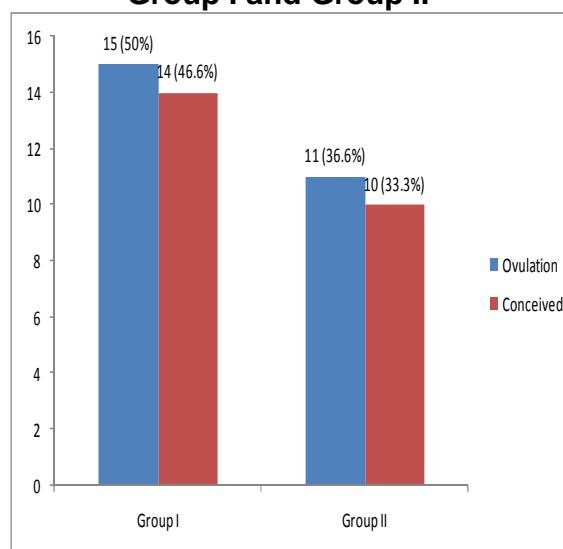
Infertile women have higher level of physical and psychological symptoms which could include but are not limited to like insomnia, headache, back pain, fatigue, anxiety and depression. These symptoms may affect the ability to implant successfully through abnormalities detectable in the immune system. Certain yoga postures that specifically target the reproductive organs and pelvic areas help to increase circulation and stimulates the energy in those area.

The study conducted by Sarah Berga [5,6] observed the improvement in reproductive health of women having anovulatory amenorrhea. These women have high levels of stress hormone cortisol in CSF. After yoga therapy cortisol dropped and 7 out of 8 (88%) women achieved normal menses and ovulation compared to 2 out of 8 (25%) in the control group. Present

study showed 66.6% resumed normal menses after three months of yoga therapy and none in clomiphene group. 67% VS 56% women had ovulation in yoga and clomiphene groups respectively.

Alice Domar [7,8] reported that conception rates were boosted to 55% for first 10 wks compared to 20% for controls after one year. Our study observed 46.6% vs 33.3% conception rates in yoga and clomiphene groups respectively over a period of six months.

Fig. 1: Comparative analysis of Group I and Group II



($p=1.000$ – NS: Fisher's exact test)

CONCLUSION

Yoga focuses on wellness and people are motivated to improve diet and lifestyle, these two factors increase the chance of conception. Results of fertility yoga are comparable to clomiphene for ovulation induction and conception, however viable pregnancy rates are more and without any

adverse effects with yoga therapy. It is especially fruitful for infertile women with long duration of married life, the only drawback being time consumption. However, a large scale randomized trials are required to actually compare the efficacy of fertility Yoga and clomiphene.

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