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Research Article

## Role of low dose danazol therapy for endometriosis related infertility and its comparison with laparoscopic fulguration in low resources

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### ABSTRACT

**Background:** The objective was to study the role of laparoscopic fulguration and danazol therapy for endometriosis in case of infertility followed by comparison of both therapies.

**Methods:** The present cross-sectional study was conducted in the department of obstetrics and gynecology SN Medical College Agra. Over the period from December 2010 to November 2013. Symptomatic women (n=50) of age group 20-39 yrs coming to gynecology OPD were selected for study group. The study group was subjected to detailed history, physical examination laboratory test, ultrasound examination, and laparoscopy. Then 50 patients were allotted for laparoscopic fulguration and 50 for danazol treatment.

**Results:** Out of 100 on transvaginal sonography, 10% of patient have cyst <2cm size and 20% have >2cm size, rest 70% have normal scan. On laparoscopy 52% of patient have red lesion, 16% have bluish black lesion, 20% have yellow brown lesion rest 22% have normal findings. On danazol therapy pelvic pain and dysmenorrhoea was relieved in 64% and 52% conceived. On laparoscopic fulguration symptom were relieved in 69% and 60% conceived.

**Conclusions:** Based on this study it can be concluded that choice of therapy depend on age of patient, duration of infertility, physical findings, goal of surgery, experience of surgeon and most important the availability of resources. In this study result was comparable.

**Keywords:** Endometriosis, Infertility, Danazol, Fulguration

### INTRODUCTION

Endometriosis is a disease in women of reproductive age group characterized by the presence of endometrial gland and stroma outside the uterus causing pain and infertility.<sup>1</sup> The prevalence of asymptomatic endometriosis is 1-7% in women serving elective sterilization, 12-32% among women of reproductive age group with pelvic pain, 9-50% in infertile women and approximately 50% among teens with chronic pelvic pain or dysmenorrhoea<sup>2</sup> the overall prevalence of endometriosis in reproductive aged women probably is between 3% and 10%. Endometriosis is strongly associated with infertility between 20-40% infertile

women have the disease. The overall prevalence of endometriosis is greater in infertile women than in fertile women. The multiple effect of danazol produces a high androgen and low oestrogen environment that doesn't support the growth of endometriotic tissue and the amenorrhea that is produced prevents the new seeding of implants from uterus into peritoneal cavity.<sup>3</sup> Fulguration is a procedure that involve using a high voltage electric current to destroy tissue.

### METHODS

The present cross-sectional study was conducted in the department of obstetrics and gynecology SN Medical

College Agra. Over the period from December 2010 to November 2013 symptomatic women (n=100) of age group 20-39 years coming to gynecology OPD were selected for study group. The study group was subjected to detailed history, physical examination laboratory test, ultrasound examination, and laparoscopy. Then 50 patients were allotted for laparoscopic fulguration and 50 for danazol treatment. After analyzing the data the result were compared.

## RESULTS

Mean age in both groups was (28 ± 10) with primary and secondary infertility both. Most of the women in study were nullipara (48%). pelvic pain and dysmenorrhoea were the most common symptom.

In danazol group (A) TVS findings were normal in 64% of cases. Endometriotic cyst <2 cm size in 12% of cases and endometriotic cyst >2 cm size in 24% of cases. In laparoscopic fulguration group (B) TVS findings were normal in 76% of cases. Endometriotic cyst <2 cm size in 8% of cases and endometriotic cyst >2cm size in 16% of cases.

**Table 1: Distribution of patient according to profile.**

Patient profile	Group A (Danazol)	Group B (Laparoscopic fulguration)
Mean age (years)	28.6 yrs	27.6 yrs
<b>Type of infertility</b>		
Primary	24 (48%)	22 (44%)
Secondary	26 (52%)	28 (56%)
<b>Socioeconomic status</b>		
	Class III-20 (40%)	Class III-28 (44%)
	Class IV-30 (60%)	Class IV-22 (56%)
<b>Menstrual patter</b>		
Normal	16 (32%)	24 (48%)
Menorrhagia	24 (48%)	18 (36%)
Dysmenorrhoea	10 (20%)	8 (16%)

**Table 2: Distribution of patients according to TVS findings.**

TVS findings	Group-A (Danazol therapy)		Group-B (Laparoscopic fulguration)	
	No.	%	No.	%
Normal	32	64%	38	76%
Endometriotic cyst < 2 cm	6	12%	4	8%
Endometriotic cyst > 2 cm	12	24%	8	16%
<b>Total</b>	<b>50</b>	<b>100%</b>	<b>50</b>	<b>100%</b>

**Table 3: Distribution of patients according to laparoscopic findings.**

Laparoscopic findings	Group A (Danazol therapy)	Group B (laparoscopic fulguration)
	n (%)	n (%)
Normal	22 (44%)	0 (0%)
Red lesions	18 (36%)	34 (68%)
Bluish black lesions	6 (12%)	10 (20%)
Yellow brown lesions	4 (8%)	6 (12%)
<b>Total</b>	<b>50 (100%)</b>	<b>50 (100%)</b>

In group A, normal laparoscopic findings were found in 44% of cases. Red flame lesions in 20% of cases, petechial lesions in 12% of cases, bluish black in 12% of cases, glandular lesion in 4% of cases, yellow brown in 8% of cases. In group B red flame lesions in 44% of cases, petechial lesions in 12% of cases, bluish black in 12% of cases, glandular lesion in 12% of cases, yellowish brown in 12% of cases. In group A after danazol therapy associated symptoms were relieved in 64% of cases. In group B after laparoscopic fulguration associated symptoms were relieved in 60% of cases. In group A 52% of cases were conceived and 36% of cases were not conceived and 12% were lost to follow up. In group B, 60% of cases were conceived and 32% of cases were not conceived and 8% were lost to follow up.

**Table 4: Distribution of patients according to symptoms relieved after therapy danazol laparoscopic fulguration.**

Symptoms pelvic pain, dysmenorrhoea	Group-A (Danazol therapy)		Group-B (Laparoscopic fulguration)	
	No.	%	No.	%
Relieved	32	64%	30	60%
Not relieved	4	8%	8	16%
Normal (No associated symptoms)	14	28%	12	24%
<b>Total</b>	<b>50</b>	<b>100%</b>	<b>50</b>	<b>100%</b>

$P \geq 0.70$

**Table 5: Distribution of patients according to pregnancy rate after danazol / laparoscopic fulguration.**

Pregnancy rate	Group-A (Danazol therapy)		Group-B (Laparoscopic fulguration)	
	No.	%	No.	%
Conceived	24	48%	30	60%
Not conceived	18	36%	16	32%
Lost to follow up	8	16%	4	8%
<b>Total</b>	<b>50</b>	<b>100%</b>	<b>25</b>	<b>100%</b>

$P \geq 0.70$

## DISCUSSION

After danazol therapy symptoms (pelvic pain, dysmenorrhoea) were relieved in 64% of women and in Group B 60% women only. In group A 52% of women conceived and in group B 60% women conceived. These result was comparable to study done by Greenblatt RB<sup>4</sup> (1980) and Dmouski WP<sup>5</sup> (1982) used danazol for the treatment of endometriosis associated infertility.

**Table 6: Results of danazol treatment in various studies.**

Study	Improvement in associated symptoms	Pregnancy rate
Greenblatt RB	75%	50%
Dmouski WP	80%	70%
Present study (group A)	64%	52%

Results of fulguration were comparable to study done by Hasson et al.<sup>6</sup> and Nowroozik Chase JS, Check JH et al.<sup>7</sup>

**Table 7: Results of laparoscopic fulguration in various studies.**

Study	Pregnancy rate
Hasson et al.	75%
Nowroozik et al.	60.8%
Present study (group B)	60%

**Table 8: Results of danazol and laparoscopic fulguration in various studies.**

Study	Pregnancy rate	
	Danazol treated n (%)	Laparoscopic fulguration
Guziek DS et al. <sup>8</sup>	91(74%)	133(68.3%)
Present study	13(52%)	15(60%)

The results were comparable to other study. Based on this discussion it can be concluded that results are comparable for danazol therapy and laparoscopic fulguration. But the choice of therapy depends on history, patient age, duration of infertility, physical findings, goals of surgery and other factor of infertility.

- Some of the implants are suspected deep, small and not visible on laparoscopy.
- Patients with unexplained infertility.
- The patient with endometriosis and pelvic pain does not desire an immediate pregnancy.
- Patient belongs to low socioeconomic status especially in developing countries.
- Experienced laparoscopic surgeon's non-availability.

- Cost-effective treatment is needed.

## CONCLUSIONS

Endometriosis is an ovarian steroid dependent, multifocal disease. Some of the implants are small and deep and thus not visible or laparoscopy. This fact limit the effectiveness of any sort of laparoscopic treatment aimed at totally eliminating endometriosis. Laparoscopic surgeries are not affordable by many patients because of its cost as well as fear of surgery especially in countries like ours. Low dose danazol therapy does not have major side effects, not require too much monitoring that's why can be given at community and primary health centers (CHCs, PHCs) to the population residing in slums and villages.

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