

Prospective Study of Infertility in Humans due to Life Style Changes

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ABSTRACT

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Today in our world most couples will have to face a challenge of infertility in their life. Infertility is the inability to conceive a child despite attempts to become pregnant over a course of 12 months. The main objective of this study was to assess the infertility treatment in humans, to compare the prevalence of infertility in different parts of Kerala and to determine the effect of environmental factors in infertility and to establish the effectiveness of patient counseling before and after drug therapy. This study was conducted at Samad IVF hospital, Trivandrum, Sanjeevani hospital, Trivandrum and Cochin hospital Ernakulam. A prospective chart review and patient history interview was carried out in adult patients (20-50) years of age. Study was conducted for a period of 3 months, the prospective data was collected from patient case records. The main findings of this study include, the occurrence of infertility is more in males, and the chance of getting infertility is increasing with age and urban population when compared to rural. It was also found that the environmental factors influenced the infertility, especially alcohol consumption and smoking. Long term treatment for infertility is required to get the desired benefit, social awareness and the effectiveness of drug therapy can be improved by patient education.

Keywords: Infertility, lifestyle changes

INTRODUCTION

Infertility is defined as the inability to conceive a child despite attempts to become pregnant over a course of 12 months. About 6.1 million couples in the United States or 10 percent of all couples of child bearing age have difficulty in conceiving according to the American Society for Reproductive Medicine (ASRM).¹ One third of the infertility cases are attributed to males, another one third to females and the remaining one third to both male and female.

Infertility occurs because the human reproductive process is so intricate that even a minor disruption may be enough to derail conception.² Ovulation abnormalities in women and sperm deficiencies in men are responsible for two-third of infertility problem. When ovulation fails to occur, there is no egg available for fertilization³ which occurs due to breakdown in women hormonal communication cycle. This disruption takes place in the part of the brain that regulates ovulation, known as the hypothalamic pituitary axis. Deficiencies can be seen in the production of lutenising hormone(LH) and follicle stimulating hormone(FSH).⁴

Women are most fertile during the period of ovulation, which occurs during the 14th day of menstrual cycle. After a woman ovulate, the egg is captured by the fallopian tube and begins its passage to the uterus. For fertilisation to occur naturally the

sperm and egg must unite in the fallopian tube. If fertilised, the egg moves and implants in the uterus.⁵

Smoking may contribute to infertility in men and women.⁶ In women, smoking is harmful to the ovaries and in men smoking lowers sperm count and impaires sperm motility.⁷ Our life style changes and many environmental agents are the main contributing factors in the development of infertility.^{8,9}

MATERIALS AND METHODS

This study was conducted at Samad IVF hospital, Trivandrum, Sanjeevani hospital, Trivandrum and Cochin hospital, Ernakulam.

Inclusion criteria

Patients with infertility and age between 20-50 were included. Patient with co-morbidities and adolescent patients less than 20 years were excluded.

Source of data

From case notes, treatment chart, patient history and laboratory data of adult patient (20-50) who were treated in Samad infertility hospital, Trivandrum, Sanjeevani hospital, Trivandrum and Cochin hospital, Ernakulam.

Study design

The study was designed on the basis of prospective chart review and patient history interview. The study was conducted for a period of three months from June 2007 to August 2007 and data collected from patient case records. Together with the symptomatic change (changes in the infertility) an increase in sperm count was also noted.

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Method of data collection

A comprehensive data collection form was designed for the collection of data, and that include patient's demographic data such as as name, age, gender, location, past medical hisory and personal history, therapeutic data including dose duration or any other alternative history, lab data such as sperm count and outcome data such as ADR, drug interaction, efficacy of therapy, trigger factor and cost effectiveness for the patient.

RESULTS AND DISCUSSION

A total of 75 adult patients were selected for this study. Out of this 75 patients, 28 patients were from Samad hospital, 25 from Sanjeevani hospital (south Kerala) and 22 patients from Cochin hospital (north Kerala). Results were analysed by statistical method namely chi-square test.

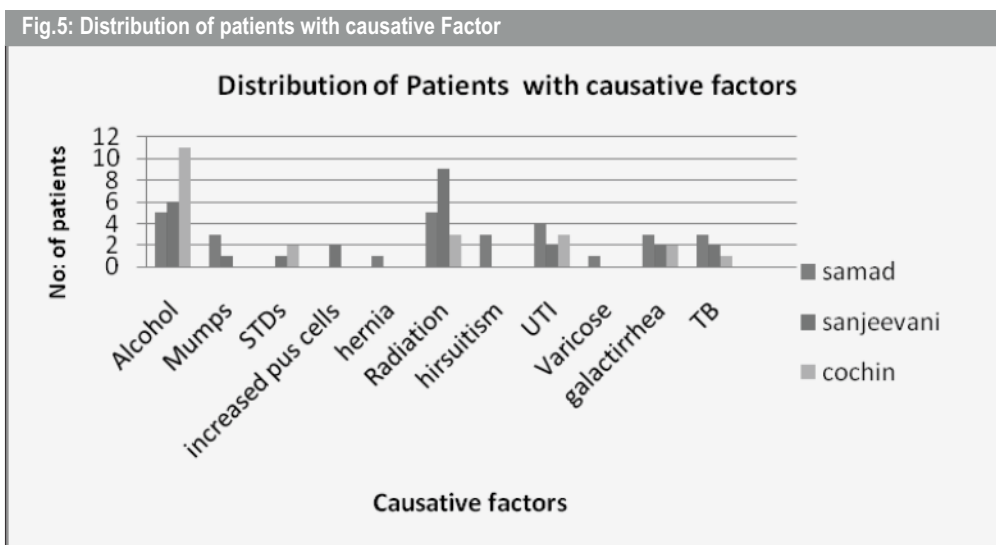
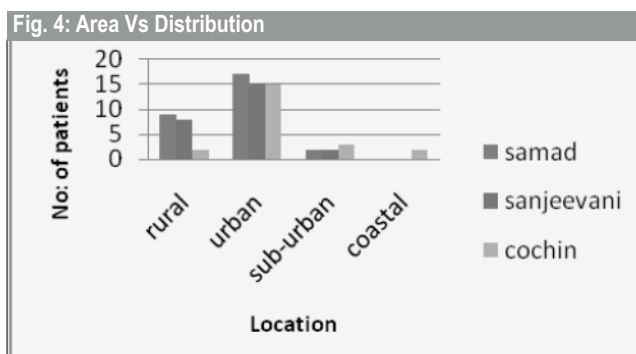
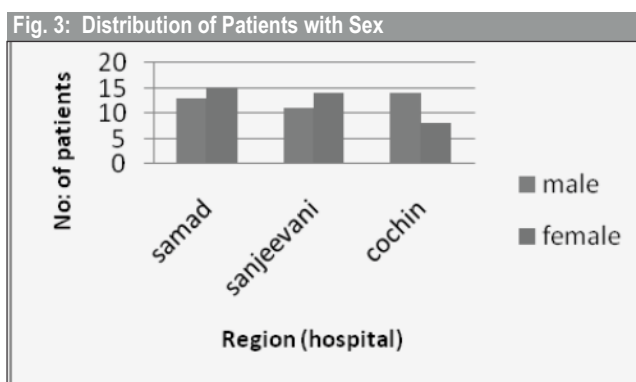
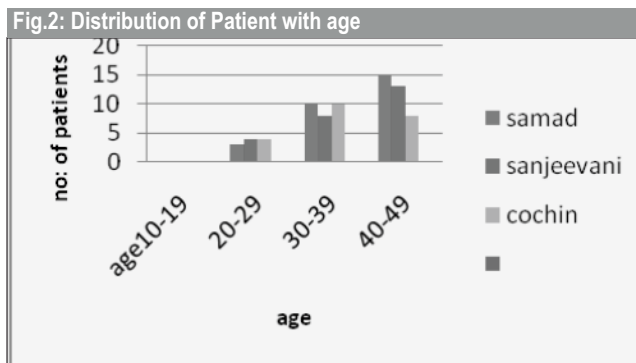
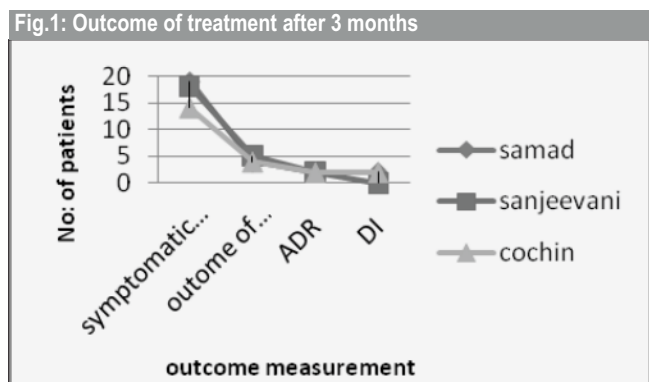


Fig.1: The outcome of the treatment was measured by observing their symptomatic changes, improvement of lab datas, ADR and drug interaction and compared these data with different hospitals of north and south Kerala. There was a significant change in the symptoms after 3 months during the therapy. It was found to be more in the case of south region when compared with north region.

Fig.2: Patients in the age group between 40—49 were found to be 48% and least in the age between 20-29 were found to be 14.6%. that is incidence of infertility increases with age.

Fig.3: The ratio of male:female in the South region is 45.3:54.7% while that in the North region is 63.6:36.3%. All together male:female ratio is 1.02:1. The prevalence of infertility was found to be more in case of male than female; it may be due to life style. Distribution of patients in the south and north was comparatively higher in females than the north.

Fig.4: Observational analysis found that the patient coming from urban area were found to be 62.66% and rural area was about 25.33%. It shows that infertility is most effected in urban area.

Fig.5: From observation analysis and patients history review it is found that all of the above factors may influence the cause of infertility. But at about 29.3% patients may affect infertility by consumption of alcohol and 22.6% of the patients may affect infertility due to radiation. Infertility by alcohol consumption is more than any other causative factors.

CONCLUSION

After completing our study we have concluded that infertility can be treated by a long term basis and patient counseling was found to be more effective. More over the occurrence of the same is larger in case of people coming from urban area than the rural area. In the case of etiology environmental factors especially alcohol consumption plays a major role and the prevalence of infertility is more in males than females. It is

increasing with the increase in age. Social awareness and effectiveness of drug therapy can be improved by patient education.

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REFERENCES

1. Sebire NJ, Jolly M, Harris JP et al Maternal obesity and pregnancy outcome: a study of 287,213 pregnancies in London. *Ind J Obes Relat Metab Disor* 2001;25:1175-82.
2. Furuhejm M and Birjith J. Miscarriage more common with low sperm count. *Int J Fertil*. 1962; 7: 17-21.
3. Brkovich AM and Fisher WA. Psychological distress and infertility: forty years of research. *J Psych Obstet Gynaecol* 19. 1998; 4:218-28.
4. Huber-Buchholz MM, Carey DGP, Norman RJ Restoration of reproductive potential by life style modification in obese polycystic ovary syndrome: role of insulin sensitivity and luteinising hormone. *J Clin Endocrinol Metab* 1999;84:1470-4.
5. Abbey A, Halman L J and Andrews F M. Psychological treatment and demographic predictors of the stress associated with infertility. *Fertil Steril* 1992; 57;1: 122-8.
6. Eliakim R, and Sherer D M. Celiac diseases: fertility and pregnancy. *Gynecol Obstet* 2001;51;1:3-7.
7. Stuzi A V and Mantovani A. A risk factor for female fertility and pregnancy: celiac diseases. *Gynecol Endocrinol* 2000; 14; 6: 454-63.
8. Gerhard I, Monga B, Krahe J and Runnebaum B. Chlorinated hydrocarbons in infertile women. *Environ Res* 80. 1999; 4: 299-310.
9. Domar A D, Zuttermeister P C and Friedman R. The psychological impact of infertility: a comparison in patients with other medical conditions. *J Psychosom Obstet Gynecol* 1993; 14; 45-52.