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Review Article

Stress and infertility: a review

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ABSTRACT

Most of the couples suffering from infertility report it to be the most stressful and depressing period of their life. Stress can be a contributor to infertility and can adversely affect the treatment success, Recent scientific evidence suggest that psychological therapy, especially mind body therapy to counter stress can significantly improve pregnancy rates in women undergoing ART. Yoga is an ideal mind body therapy that is indigenous and one that can be effectively applied in the Indian scenario to optimize the psychological milieu of the sub fertile undergoing treatment. Infertility and ART from well-structured government run IVF centres can greatly reduce the financial burden of the infertile couple and further reduce their stress levels. Thus stress reducing strategies and low cost infertility treatment facility offer to be the ideal combination to fulfill the dreams of parenthood for the suffering sub fertile couples in India.

Keywords: Stress, Infertility, Mind body therapy, Yoga, IVF,ART

INTRODUCTION

Infertility is responsible for a great deal of psychological trauma to the affected couples. It also affects them socially and economically. There are 60 to 80 million couples currently suffering from infertility[1]. The worldwide estimate of couples suffering from infertility is 8-12%.[2,3] Among these a subset of 3-5% of couples have unexplained infertility.[4] The countries with high fertility rates are paradoxically showing increasing incidence of infertility, this is termed as "barrenness amid plenty[4]". If "age but no birth" definition is used, the percentage of primary infertility in India is 3.9% (age-standardized to 25-49 years) and 16.8% (age-standardized to 15-49 years).[1]

The inability to bear children is a very stressful situation and infertility can cause a multitude of adverse social and psychological consequences that included aggravated mental distress. Among the couple, an increased level of distress is seen more in the female counterpart, which can even endanger their mental health.[7] Infertility has been the cause for anxiety, depression, and psychosomatic complications.[5-8]

Elevated stress levels have been associated with infertility and in fact cause same.[10-12] Studies have also shown that psychological distress adversely affects the treatment process of infertility and to a major extent the outcome.[6] Hence improving the psychological milieu of the couple especially the female partner is important while evaluating and managing subfertility.

Does infertility cause stress?

Children are building blocks for maintaining family bond and help bridge the generation gap.[14] Having a child is considered as proof of manhood/woman hood; a symbol of fruitfulness and the child is a precious heir to continue the family name. Hence infertility is social stigma, which

has a devastating effect on women's health. In many traditional cultures and especially in India, there is a relatively higher pressure on women to have a child and she is often the one who is ostracized and blamed for not creating progeny.[13] The social consequences of infertility mainly affect the women, although men are equally responsible for infertility.[15]

Infertility can lead to a religious or spiritual crisis. Patients sometime blame the God for their barren life and accept it as a fact that they are being punished for previous behaviours or they cannot nurture being a good parent. In addition, certain religions forbid or discourage some forms of infertility treatment. All this profoundly affects the stress of the infertile couple sloughing against the entire stigma and opting to try infertility evaluation and treatment.

Infertility can also cause a great deal of financial stress. Being infertile and wanting to cure it can be very expensive! A huge amount of money is required for the treatment and tests. With the advent of modern assisted reproductive techniques such as IVF, which require expertise and advanced technology, the extent the expenses incurred while undergoing IVF can be huge. The patients often run from pillar to post often bankrupting them, mortgaging property, all to fulfil the dream of having a baby. Adding all the previously mentioned points, it leads to consensus that infertility can cause huge amount of stress.

Does stress cause infertility?

It is a well-known fact that increasing stress levels and certain mental disorders like anorexia significantly alters the HPO axis of the woman. This alters the woman's reproductive hormonal milieu and can contribute to ovulatory dysfunction and subfertility. Men with stress issues often have erectile and coital dysfunction again contributing to subfertility.

Several studies have been done on whether or not anxiety or depression contributes to infertility as the major factor. A European study found that anxious women took longer to conceive and were more likely to miscarry, than women who have lower levels of anxiety.[17,18] Another study has shown that women with a history of depression are twice as likely to subsequently experience infertility when compared to women with no such history. Yet another study showed a higher level of luteinizing hormone in depressed woman that can render them sub fertile.

The more, anxiety or depression the women expressed before undergoing IVF, the less likely they were to get pregnant. Studies have been conducted worldwide correlating the distress levels in women prior, or at the beginning of, an IVF cycle. Majority studies showed increased distress levels are indeed associated with diminished IVF success rates i.e. decreased pregnancy rates. Although some of the studies found no relationship between distress and pregnancy rates, but most of them supported the theory.

How do you decrease stress during infertility?

In USA for couples experiencing infertility three psychological methods are being offered as treatment for stress:

- Individual/couples therapy
- Support groups and
- Mind/body groups

A randomized study was done in which one-third of the women were randomly assigned to mind/body, one-third to the support group, and one-third received no psychological intervention (the control group). A constant supervision and care was provided by an infertility specialist to all of the women who were enrolled. Of the couples offered these treatments 55% take home baby rate was observed in the mind/body group, 54% in the support group and 20% in control group.[19]

Mind/body techniques include physical skills namely relaxation techniques, mini relaxation techniques and life style modifications. Mini relaxation technique included slow and deep breathing. Mind/body techniques aim at elevating the mood to help feel better, to enjoy and cherish life and be like your normal self.

Cognitive restructuring, social support and coping with negative emotions are included in psychological techniques.

As we all know Yoga and Meditation is easy to perform and extremely helpful in relaxation and freeing the mind from the cloud of worries. In humans the left brain is more analytical whereas the right brain is more instinctual. Yoga helps in utilization of the right brain more and makes the couple more contented, carefree, supportive and jovial. Yoga and meditation is an ideal way to provide Mind/body therapy in the Indian scenario.

Yoga and meditation can help women who are experiencing the challenges of infertility. The practice of meditation and relaxation helps in rejuvenating mind and giving the capability for clarifying the thought process. It helps in maintaining healthy body chemistry, and provides patience to undergo the challenge of infertility treatments. As per the common belief yoga is not just an exercise or gymnastic postures meant for young people to be in great shape. But yoga is much more than physical exercise-it is a scientific system of altering the brain and body chemistry to support a heightened state of sensitivity and clarity. The techniques of yoga include exercise (both gentle and rigorous), breathing techniques, meditation (visualization, mantra, concentration), and relaxation.

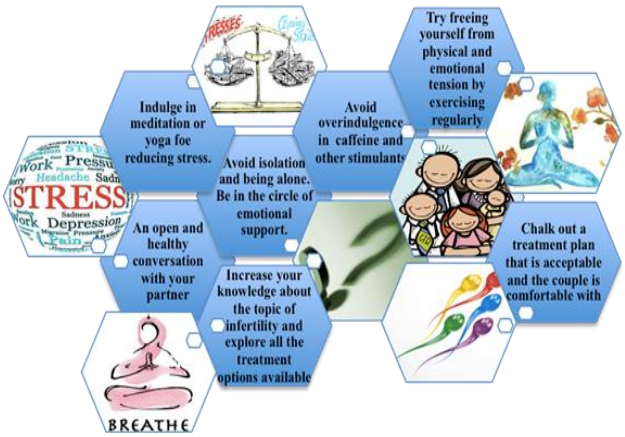

Figure 1: Tips for stress reduction.[19]

The IVF and Reproductive Biology Centre, MAMC, New Delhi

For the first time in a Delhi government hospital, twins were born through the In Vitro Fertilization (IVF) method on 11th November 2008 on Monday. The IVF and Reproductive Biology center at Maulana Azad Medical College, New Delhi started in 2008 is the first government IVF center in India. It has been operational for over 7 years now. The center has given a new ray of hope to many needy couples who are facing the problem of subfertility with budget limitations. The success rate is close to 40 % and now has more than 40 induction cycles per month. The cost of the procedure is approximately Rs 40,000, which is indeed an achievement for the hospital. The patients have to pay for the injectable hormones, which are not available in the government supply. In addition to it a few required lab investigations, which are still not available here on urgent basis, are to be paid for. The help and advice from the surgeons and urologists for andrology related problems are also available as it is a teaching institution.

One major project of ICMR entitled "To study the effect of counselling with yoga based stress management on the clinical pregnancy rate and uterine artery flow parameters in women undergoing assisted reproduction" has been sanctioned. In this study three hundred women were enrolled according to inclusion criteria by chit pull method from March 2014 to May 2015. One sixty women were in study group and 140 in control group. We found 50.5% women were positive in study group in comparison to control group 27% the significant difference between pregnancy result of study and control group. P value= 0.008* Highly Significant (Chi square Test). All the cases with positive pregnancy outcome showed reduction in anxiety, depression and infertility related stress in the study group (unpublished data).

At our fertility center women undergoing treatment are counselled. The details of women attending the infertility clinic are entered into a specially designed proforma which measures the stress levels. This proforma is evaluated by trained personnel and counselor. The enrolled women are taught various techniques of Yoga and meditation according to their stress levels. These women were noted to have less stress levels on subsequent psychological evaluation and had significantly higher pregnancy rates.

DISCUSSION

Most of the couples suffering from infertility report it to be the most stressful and depressing period of their life. Stress can be a contributor to infertility and can adversely affect the treatment success, Recent scientific evidence suggest that psychological therapy, especially mind body therapy to counter stress can significantly improve pregnancy rates in women undergoing ART. Yoga is an ideal mind body therapy that is indigenous and one that can be effectively applied in the Indian scenario to optimize the psychological milieu of the sub fertile undergoing treatment. Infertility and ART from well-structured government run IVF centres, like the IVF and Reproductive Biology Centre at MAMC, can greatly reduce the financial burden of the infertile couple and further reduce their stress levels.

Thus stress reducing strategies and low cost infertility treatment facility offer to be the ideal combination to fulfil the dreams of parenthood for the suffering sub fertile couples in India.

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