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EVIDENCE-BASED REVIEWS

How to treat depression, stress associated with infertility treatment

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Your understanding can ease the emotional roller coaster.

"I think it's my fault we can't get pregnant," says Mrs. S, who has been referred by her gynecologist for evaluation of anxiety and depression. Mrs. S, age 33, and her husband have been trying to conceive their first child for 2 years.

The couple has undergone infertility workups, including a semen analysis and hysterosalpingography, and results have been within normal limits. The gynecologist recommended intercourse every other day, but Mr. S developed stress-related erectile dysfunction (which was treated with sildenafil).

Mrs. S has no personal or family history of depression. Her depression has worsened as she contemplates more invasive and expensive procedures, such as intrauterine insemination (IUI) and in vitro fertilization (IVF).

Her Beck Depression Inventory score of 22 indicates mild depression. She is not actively suicidal, but she sometimes doubts that life is worth living. She feels like a failure and wants to know if you think stress is contributing to her infertility.

Women with a 2- to 3-year history of infertility despite repeated treatments are at risk of stress, anxiety, and depression.[1] Even if treatment eventually succeeds, anxiety often persists during pregnancy.[2] Your knowledge of medical infertility treatments' emotional toll will help you understand, educate, and support infertile women and their partners.

Box

Infertility: Medical causes are found in most cases

Infertility affects approximately 6 million U.S. women and their partners.[3] As recently as the 1960s infertility was thought to be caused primarily by female psychological problems,[4] such as neurotic, conflicted feelings about the transition to adulthood or about sex, pregnancy, labor, or motherhood.[5,6]

This belief changed as researchers identified organic causes of infertility, such as blocked fallopian tubes, sperm abnormalities, and anovulation. A definitive diagnosis can now be made in 85% to 90% of infertility cases, and two-thirds of couples can conceive after medical intervention.[7]

Age and fertility. Most experts recommend that women age >35 who wish to conceive seek gynecologic evaluation after 6 months of unsuccessful intercourse. Chances of becoming pregnant begin to decline at age 35 and drop sharply after age 40.[8] Beyond age 43, the only infertility treatment likely to be successful is implanting an embryo created with an egg donated by a younger woman.

Stress and fertility

Infertility—failure to conceive after 1 year of regular unprotected intercourse—affects approximately 10% of the reproductive-age U.S. population (Box).[3-8] Does stress affect a woman's chance of becoming pregnant? Research into this question—voiced by Mrs. S—has produced conflicting results.[5,9,10]

Stress does not universally prevent pregnancy; women have conceived as a result of rape. However, chronic extreme stress—such as that imposed by war, imprisonment, or starvation—can change the menstrual cycle. Effects range from subtle luteal-phase deficiency to menses cessation.[9] It may be that evolution favored females of species who could "turn off " fertility during stressful times to conserve physical resources and "turn it back on" and bear offspring after the threat passed.

Neuroendocrine markers. Researchers examining the role of stress in infertility and its treatments have focused on the neuroendocrine system—particularly neurotransmitters such as prolactin, endorphin, norepinephrine, dopamine, and cortisol. Although chronic anxiety and depression have been linked in animal models to neuroendocrine mechanisms of infertility,[4] findings in humans have been mixed (Table 1).[11-15]

Table 1

Does stress reduce fertility? Research results are mixed

Expand table

Study design (year of publication)	Results
Controlled prospective trial, 40 women undergoing IVF (1992)[11]	IVF success rates were comparatively lower among women with high cortisol concentrations
	Women with high prolactin concentrations had greater numbers of oocytes but lower fertilization rates
	Failure to conceive was associated with high depression symptom scores, maladaptive coping strategies, and avoidance behavior
Controlled prospective trial, 330 infertile women (1993)[12]	Depressed women had a lower pregnancy rate after a first IVF-ET, compared with nondepressed women
Uncontrolled prospective trial, 13 women without a history of infertility (1997)[13]	Mean adrenaline, norepinephrine, and cortisol levels excreted in urine were not significantly different in menstrual cycles when women conceived, compared with nonconception cycles
	Little relationship seen between psychological measures of mood state and excretion of adrenaline and cortisol
Controlled, prospective trial, 49 infertile women (1997)[14]	Patients who conceived with IVF-ET had lower systolic blood pressures and slower heart rates under stress-test conditions than did those who did not conceive
Controlled prospective trial, 40 women after successful IVF-ET (1998)[15]	No difference in hormonal stress markers during first 27 days of pregnancy between women who later gave birth and those who experienced miscarriages
	Physiologic stress hormone concentrations showed little association with psychological scores, and high anxiety and stress levels did not appear to prevent pregnancy

IVF: In vitro fertilization

IVF-ET: In vitro fertilization with embryo transplant

Psychological interventions. Some investigators have sought to determine whether psychological interventions can increase pregnancy rates in infertile women.

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