NATIONAL CURRICULUM IN REPRODUCTIVE PSYCHIATRY

Infertility and Perinatal Loss

Psychosocial Aspects of Infertility
Integrative Case Conference
Trainee Guide

Contributors
Sharvari Shivanekar, MD
Soudabeh Givrad, MD

Goals and Objectives
At the completion of this session, participants will be able to:

- Define infertility, its workup, and current treatment options
- Understand a range of psychological experiences related to infertility, including the impact of disenfranchised grief
- Have knowledge of common psychiatric disorders related to infertility
- Discuss the effects of infertility on interpersonal and family dynamics
- Understand cultural humility and its importance when working with issues related to infertility
- Learn about treatments and interventions to address psychiatric aspects of infertility

Pre-session Learning
Before attending the classroom didactics on this module, please review some basic concepts regarding the psychological aspects of perinatal loss by reviewing the following resources:

- Complete infertility and loss self-study guide
- Bhat A, Byatt N: Infertility and perinatal loss: When the bough breaks. Curr Psychiatry Rep. 18(31):1-11, 2016
- *Psychiatric Aspects of Infertility and Infertility Treatments*: Burns LH. Psychiatric aspects of infertility and infertility treatments. The Psychiatric clinics of North America. 2007;30(4):689-716
- *Psychological Impact of Infertility*: Cousineau TM, Domar AD. Psychological impact of infertility. Best Practice & Research Clinical Obstetrics & Gynaecology. 2007;21(2):293-308
- *The Psychology of Reproductive Traumas: Infertility and Pregnancy Loss:* Diamond DJ, Diamond M. The psychology of reproductive traumas: Infertility and pregnancy loss. Fertility and Sterility. 2005;83(5):S14

Overview

The American Society for Reproductive Medicine defines infertility as "no evidence of conception after one year of trying in a couple where the female partner is less than age 35, and after six months of trying when the female partner is age 35 and older." It is estimated that 9-15% of couples experience infertility, but only about half seek treatment. Approximately 40% of infertility cases are due to female factors, 40% are due to male factors, and 20% are a combination and/or unexplained (ASRM 2015).

Although acute alterations in cortisol concentrations may not immediately cause disease, long-term alterations of the HPA axis are associated with adverse health outcomes. For example, high cortisol concentrations have been associated with psychiatric disorders, including post-traumatic stress disorder (Wosu 2013). Psychiatric disorders can contribute to infertility through disruptions in the HPA axis, HPG axis (including GnRH and LH pulse inhibition), changes in immune function associated with depression and chronic stress, and autonomic nervous system activation. Proposed mechanisms through which depression could directly affect fertility involve physiologic changes in the depressed state, such as thyroid dysfunction and the disruptions mentioned above in the HPA and HPG axes. However, the evidence for a relationship between psychiatric symptoms and success in infertility treatment is still inconclusive. A 2016 study of 135 IVF patients provided preliminary evidence that long-term systemic cortisol (exposure) may influence reproductive outcomes and, in turn, suggests that interventions to reduce cortisol prior to commencing IVF could improve treatment outcomes (Massey 2016).

Women have a range of psychological reactions and experiences to infertility. These reactions and experiences are influenced by their psychiatric, reproductive, cultural, and family backgrounds, as well as their personalities. For some, the experience of infertility is associated with significant personal distress (Rooney and Domar 2018). Infertility can have deleterious social and psychological consequences on the individual, from overt ostracism or divorce to more subtle forms of social stigma leading to isolation and mental distress. A study of 488 American women who filled out a standard psychological questionnaire before undergoing a stress reduction program concluded that women with infertility felt as anxious or depressed as those diagnosed with cancer, hypertension, or recovering from a heart attack (Harvard Mental Health Newsletter 2009). As many as 13% of women experience passive suicidal ideation after an unsuccessful IVF attempt (Baram 1988, Cousineau 2007). In some cultures, motherhood is the only way for women to enhance their status in the family and community. A report by the World Health Organization on the social consequences of infertility in developing countries notes that some childless women "choose suicide over the torturous life and mental anguish caused by infertility." In the United States, experts who study infertility have noted that infertile couples are one of the "most neglected and silent minorities" (Cousineau 2007).

Case Study Part 1

Becca, a 34-year-old nulliparous woman with a past medical history of Hashimoto's thyroiditis, polycystic ovarian syndrome (PCOS), obesity, obstructive sleep apnea, major depressive disorder, and a suicide attempt at age 18 is referred by her gynecologist with her fiancé Rob for an evaluation of worsening depression and anxiety. The couple has been unsuccessful in becoming pregnant after 12 months of regular unprotected intercourse. Her gynecologist has recommended a workup for infertility. Becca has been treated with several antidepressants (sertraline, paroxetine, fluoxetine, duloxetine) since age 18 but has felt psychiatrically stable without medication for the last five years with weekly psychotherapy. However, she reports having "a breakdown" after concerns about infertility were raised. Her current symptoms include severe anxiety, panic attacks at least twice a week, frequent ruminations, feelings of shame, guilt, worthlessness, and being "broken and defective." Although the workup is pending, and Becca is convinced that "it is all [her] fault." Becca and Rob report having more arguments and a reduced sexual relationship. Becca feels Rob has been more withdrawn and has not wanted to talk about what is going on for them, and as a result, she feels more alone and isolated.

Case Questions/Discussion

1) What are some of the common psychological experiences for many women experiencing infertility?

2) What psychiatric disorders can be seen in many women with infertility (and their partners)?

3) What are some of the common psychological experiences within the couple?

4) What challenges can LGBTQ couples or individuals face in terms of fertility and assisted reproduction?

Suggested reading:

- NCRP Statement and annotated bibliography:
- Jin H, Dasgupta S. Disparities between online assisted reproduction patient education for same-sex and heterosexual couples. Human reproduction (Oxford, England). 2016;31(10):2280-2284.
- Wu HY, Yin O, Monseur B, et al. Lesbian, gay, bisexual, transgender content on reproductive endocrinology and infertility clinic websites. Fertility and sterility. 2017;108(1):183-191.

Case Study Part 2

Becca remains hesitant to restart any psychotropic medications but has increased the frequency of her psychotherapy sessions to twice a week. She loves cycling and is also going to a meditation group on the weekends. She practices breathing techniques at home which have helped reduce her stress level. Her REI specialist has advised to avoid smoking, alcohol, and other substances and to maintain a healthy diet and regular exercise. The doctor has met with the couple and provided education about the anticipated workup. Becca is informed that the potential treatment may include the use of medications such as clomiphene citrate, oral contraceptives, medroxyprogesterone, Gonadotropin-releasing hormone agonists (GnRH), purified FSH and LH, and HCG. She is informed that depending on the testing results, she may or may not need in vitro fertilization (IVF), which may cost $10,000 - $20,000 per cycle. Her insurance company has informed her that her plan does not cover assisted reproductive treatments.

The couple recently visited Becca's family in California, where her sister announced that she is pregnant with her second child. Becca felt guilty that, despite feeling happy for her sister, she also had feelings of anger and envy. She has noticed that Rob has not been his usual self, has been more withdrawn, and often excuses himself from social activities. He has admitted feeling sad about being around other couples with children and about their infertility. Becca returns to your office, deeply distressed. The session focuses on feelings of anger, envy, and a sense of worthlessness she felt during the California visit.

Case Questions/Discussion

1) What are the common psychiatric side effects of various infertility treatment agents?

2) What are some cultural issues faced by couples experiencing infertility?

3) How can one be mindful and incorporate the cultural aspects specific to each individual when assessing and treating patients with infertility?

4) Do most American health insurance providers cover assisted reproductive treatments (ARTs)? On average, how much money will the average infertile couple pay for a successful delivery using ARTs?

Case Study Part 3

Becca and Rob undergo infertility workup, and it is determined that their infertility is due partly to unpredictable anovulatory cycles for Becca. Additionally, to the couple's surprise and dismay, Rob's sperm analysis reveals that he has a low sperm count and abnormal sperm morphology. The fertility doctor recommends three cycles of intrauterine insemination, but these

are unsuccessful. When taking clomiphene, Becca notices increased anxiety and feelings of paranoia. She has insight into these feelings, which causes a further increase in anxiety.

Becca and Rob accept their doctor's recommendation to start in vitro fertilization (IVF). They start the IVF process, including Becca taking oral hormones and going for frequent ultrasounds and an egg retrieval session. Having to go through various procedures and the intrusions into her body increases her anxiety and irritability. Moreover, Becca is advised not to engage in any strenuous physical activity by her REI doctor. Cycling is one of her main coping mechanisms to de-stress, and being unable to do that further adds to her mood and anxiety issues.

You see her right before her first IVF treatment. After thoroughly discussing the risks and benefits and her current symptoms, Becca agrees to start an antidepressant. After two unsuccessful IVF cycles, the couple faces deep disappointment, grief, and hopelessness. They eventually do achieve a viable pregnancy in the third IVF cycle. In one of the sessions during this time period, Becca brings up their worries about their finances. Becca does not have paid maternity leave from her current job, and they need to save money for her to be able to take off a few months to be with the baby, but the cost of ART has made it impossible to do so, and they have had to use a significant amount of their current savings. This has increased their stress levels, and Rob is considering alternative ways to add to his income. You continue to see her regularly during this period and titrate the dosage of sertraline, to which she is showing at least partial response, with improvement in her anxiety and mood. She continues her psychotherapy and meditation as well.

You, Becca, and Rob have had a detailed conversation and decide to continue Becca's antidepressant during her pregnancy. Becca and Rob are feeling cautiously optimistic about pregnancy, though they continue to experience significant anxiety. In your sessions, Becca is intermittently tearful when talking about their long, painful, and expensive journey to a viable pregnancy. She is aware of the increased risk of complications in IVF pregnancies, which adds to her anxiety and does not let her fully enjoy her pregnancy even though it is going smoothly.

Case Questions/Discussion

1) What are some of the psychological experiences that can occur during infertility treatment?

2) What psychological experiences can happen during and after a successful pregnancy after a period of infertility or infertility treatment?

3) What are some treatments for these psychiatric/psychological symptoms and issues?

References & Further Reading

Baram D, Tourtelot E, Muelcher E, Huang K. *Psychosocial adjustment following unsuccessful in vitro fertilization.* J Psychosom Obstet Gynecol. 1988;9:181-190.

Burns LH. *Psychiatric aspects of infertility and infertility treatments.* The Psychiatric clinics of North America. 2007; 30(4):689-716.

Cousineau TM, Domar AD. *Psychological Impact of Infertility*. Best practice & research Clinical obstetrics & gynaecology. 2007;21(2):293-308.

Cui W. (2010). Mother or nothing: the agony of infertility. *Bulletin of the World Health Organization*, *88*(12), 881–882. https://doi.org/10.2471/BLT.10.011210

Dupree JM, Dickey RM, Lipshultz LI. *Inequity between male and female coverage in state infertility laws.* Fertility and sterility. 2016;105(6):1519-1522.

Fisher, JR, Hammarberg, K. *Psychological and social aspects of infertility in men: an overview of the evidence and implications for psychologically informed clinical care and future research.* Asian journal of andrology. 2011;14(1):121-9.

Frederiksen Y, Farver-Vestergaard I, Skovgard NG, Ingerslev HJ, Zachariae R. *Efficacy of psychosocial interventions for psychological and pregnancy outcomes in infertile women and men: a systematic review and meta-analysis.* BMJ Open. 2015; 5(1):e006592.

Grant ECG. *Hormonal Contraception and Its Association With Depression.* JAMA Psychiatry. 2017;74(3):301–302.

Hook, J. N., Davis, D. E., Owen, J., Worthington Jr., E. L., & Utsey, S. O. *Cultural humility: Measuring openness to culturally diverse clients.* Journal of Counseling Psychology. 2013; 60(3):353-366.

Humphries LA, Chang O, Humm K, et al: Influence of race and ethnicity on in vitro fertilization outcomes: systematic review. Am J Obstet Gynecol 214(2):212.e1-212.e17, 2016

Hutner, L. A., Catapano, L. A., Nagle-Yang, S. M., Williams, K. E., & Osborne, L. M. (2022). *Textbook of women's Reproductive Mental Health*. American Psychiatric Association Publishing. Chapter on Infertility and Perinatal Loss.

Insogna IG, Ginsburg ES. *Infertility, Inequality, and How Lack of Insurance Coverage Compromises Reproductive Autonomy.* AMA Journal Of Ethics. 2018; 20(12):E1152-1159

Janitz AE, Peck JD, Craig LB: Racial/ethnic differences in the utilization of infertility services: A focus on American Indian/Alaska Natives. Matern Child Health J 23(1):10-18, 2019

Katz P, Showstack J, Smith JF, et al. *Costs of infertility treatment: results from an 18-month prospective cohort study*. Fertility and sterility. 2010; 95(3):915-21.

Lynch CD, Prasad MR. *Association between infertility treatment and symptoms of postpartum depression.* Fertility and Sterility. 2014 ;102(5):1416-21.

Lynch CD: There are racial and ethnic disparities in infertility, indeed, but we need better data. Paediatr Perinat Epidemiol 33(2):126-128, 2019

Massey AJ, Campbell B, Raine-Fenning N, Aujla N, Vedhara K. *The association of physiological cortisol and IVF treatment outcomes: a systematic review.* Reproductive medicine and biology. 2014;13(4):161-176.

Rooney KL, Domar AD: The relationship between stress and infertility. Dialogues Clin Neurosci 20(1): 41–47, 2018

Shirazi TN, Rosinger AY: Reproductive health disparities in the USA: Self-reported race/ethnicity predicts age of menarche and live birth ratios, but not infertility. J Racial Ethn Health Disparities 2020

Thorn P. *Understanding infertility: Psychological and social considerations from a counseling perspective.* International Journal of Fertility and Sterility. 2009;3(2):48–51.

Wosu AC, Valdimarsdottir U, Shields AE, Williams DR, Williams MA. *Correlates of cortisol in human hair: implications for epidemiologic studies on health effects of chronic stress.* Annals of epidemiology. 2013;23(12):797-811.e792

Wu HY, Yin O, Monseur B, et al. *Lesbian, gay, bisexual, transgender content on reproductive endocrinology and infertility clinic websites.* Fertility and sterility. 2017;108(1):183-191.

Yeshua A, Lee JA, Witkin G, Copperman AB. *Female Couples Undergoing IVF with Partner Eggs (Co-IVF): Pathways to Parenthood.* LGBT health. 2015; 2(2):135-139.

Zhou X, McQueen DB, Schufreider A, et al.: Black recipients of oocyte donation experience lower live birth rates compared with White recipients. Reprod Biomed Online 40(5):668-673, 2020

Webpage Links

1) Harvard Mental Health Letter: The psychological impact of infertility and its treatment

https://www.health.harvard.edu/press_releases/psychological-impact-of-infertility

2) American Society of Reproductive Medicine
https://www.asrm.org/topics/topics-index/infertility

3) Bulletin of the World Health Organization Volume 88: 2010 Volume 88, Number 12, December 2010, 877-953
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2995184/

4) Understanding Infertility: Psychological and Social Considerations from a Counselling Perspective: https://www.ijfs.ir/article_45746_14f7d872dd3445ca1fce15152245be30.pdf