

Preconception and Sexual Health in Eating Disorders

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Outline

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 - Functional hypothalamic amenorrhea
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- Preconception counseling



Abbreviations:

- AN: anorexia nervosa
- BN: bulimia nervosa
- BED: binge eating disorder
- BMI: body mass index
- ED: eating disorder
- IBW: ideal body weight
- IOP: intensive outpatient program
- IVF: in vitro fertilization
- PCOS: polycystic ovarian syndrome
- Pt: patient
- FHA: functional hypothalamic amenorrhea
- FSH: follicle stimulating hormone
- LH: luteinizing hormone
- TTC: trying to conceive
- Tx: treatment



Case #1: Sexual dysfunction

- 24 year old female seen for eating disorder evaluation for IOP
- Admit weight 100lbs (80% IBW and BMI of 16)
- Irregular menstrual cycle
- ED started 2 years prior with symptoms predominantly restricting (skipping meals, 700-800 kcals/day)
- In a stable relationship for 2 years with minimal sexual activity and reports low libido
- Describes feeling tired all the time, not wanting to be around people (including partner)
- Significant irritability, feeling “really emotional”
- Partner keeps bringing up ED which further worsens sexual desire

How would you approach treatment of this patient’s sexual dysfunction?



Sexual dysfunction: Epidemiology and symptoms

Nearly two thirds of women with an eating disorder report loss of libido and sexual anxiety (Pinheiro, 2010)

Symptoms: For both BN and AN

- Decreased sexual interest and desire
- Increased sexual anxiety
- Lower sexual arousal functioning
- Increased sexual avoidance
- Less pleasure, orgasm, and sexual satisfaction
- Decreased likelihood of sexual relationship within intimate partnerships

These symptoms are seen both with and without amenorrhea!



Sexual dysfunction: Restricting Subtype vs. Binge/Purging Subtype

Restricting Subtype

- “Overcontrol” = emotional constriction
- Limited sexual functioning → decrease in arousal, lubrication, orgasm, and satisfaction; decreased sexual encounters
- Association between sexual dysfunction and negative body image
- AN with 5x greater loss of libido compared to BN (Pinheiro et al., 2010)

Binge/Purging Subtype

- “Undercontrol” = emotional dysregulation
- More impulsive and chaotic sexual profiles → earlier age of sexual encounters, higher number of partners, higher rates of masturbation
- Association between sexual dysfunction and “emotional eating” and binge eating frequency

Differences between subtypes in sexual drives disappear at lower BMIs



Sexual dysfunction: Etiologies and contributing factors

- Emaciation → stress response → activated HPA axis → Hypogonadism
- Comorbidities (e.g. depression, anxiety) and cognitive distortions
- Adverse childhood experiences, negative family climate, and especially traumatic childhood sexual abuse (Kravvariti and Gonidakis, 2014).
- Body image perception
 - Concerns with body weight/size; dissatisfaction with body parts; discomfort with one's body in front of partner
 - Negative body image was associated with worsened sexual dysfunction, and not related to actual body size or BMI
- Underlying sexual avoidance



Sexual dysfunction: Treatment

- **Weight restoration** results in improvement in sexual dysfunction (Morgan et al., 1999)
 - Menses return at approximately 90% IBW OR about 2kg greater than weight at which period was lost
 - Fluctuation in BMI directly related to changes in sexual interest
 - Recovery from pathologic eating behaviors showed significant improvement in sexual symptoms via weight restoration, **even if pathological attitudes regarding body image and slimness partially persist** (Fichter et al., 2006)
- **CBT**
 - Significant improvement in all sexual functioning domains after CBT for women with both AN and BN - does not necessarily need to target sexual dysfunction directly (Castellini et al., 2013)



Case #1: Sexual dysfunction

How do you treat this patient's sexual dysfunction?

- Assess for co-morbidities and treat
 - Does this patient have an underlying depression that could be contributing to her low libido?
- Weight restoration may restore sexual interest
- Consider CBT to address patient's eating behaviors – doesn't need to focus on sexual dysfunction or body image perception



Case #2: Delayed puberty

- 16yo female referred by pediatrician to evaluate for possible ED as cause of primary amenorrhea
- Presenting weight 85lbs (82% IBW), denies recent weight loss, but has not gained any weight in last 4 years per growth charts
- Runs track 5 days per week yet reports eating 3 meals per day and snacks, denies restrictive eating or purging
- Food diary reveals an intake of ~1800kcal/day and exercising 2 hours/day
- Mother reports – “she is too healthy” and reports her onset of menses at age 12 years

How would you address their concerns?



Puberty

- Puberty is high risk time for development of ED and when sexual reproduction first becomes possible
 - Profound body changes associated with accompanying life changes
 - Window of vulnerability to sociocultural influences related to body image and weight
- Can see delayed puberty/menarche from hypothalamic dysregulation in eating disorders or malnutrition (primary amenorrhea)
 - Most girls enter puberty by age 13 years and start menstruation by 16 years- most delays are constitutional, yet must exclude other causes (e.g., eating disorder)
 - Ovulation follows the onset of menarche: at 1-3 years after one's first period only 50% of cycles are ovulatory



Case #2: Delayed puberty

How would you address their concerns?

- Provide psychoeducation that most girls would have started their period by age 16, and although most individuals that have not are delayed due to constitutional or genetic factors, malnutrition can delay menarche
- A minimum level of body fat (17-22%) is needed for the initiation and maintenance of menstrual cycles
- Lack of weight gain in adolescents may be similar to weight loss in adults (“falling off the growth curve”)
- Athletes and adolescents need extra calories so caloric intake of 1800kcal likely far below adequate for her needs
- Screen for eating disorder cognitions and other weight control behaviors. EDs more common among athletes, especially runners, dancers, gymnasts
- Menstruation should start with treatment and weight gain (can use growth curve for IBW) and if not, further investigation is warranted



Case #3: Infertility

- 30yo female seen for evaluation of infertility of 18 months duration
- BMI 20, hx of anxiety/depression and AN-binge/purge type
- Reached a “healthy weight” 1 year ago and having light periods for the past 3 cycles
- Binges and purges approximately 1 day per week now, restricts to 1200kcal/day
- Infertility work-up reveals normal ovarian reserve for age, patent tubes and uterus unremarkable, semen analysis wnl
- Hormone testing remarkable for low estradiol, FSH and LH and normal TSH and prolactin level
- **How would you conceptualize this patient’s infertility?**



Fertility in EDs

- ED pts more likely to be childless than controls and have lower pregnancy and childbirth rates
- Higher rate of unplanned pregnancies and more negative attitudes towards pregnancy in both AN and BN
- ED pts more likely to have seen a doctor for infertility, take longer than 6 months to conceive and have conceived with fertility treatment
- However, an 11.5 year follow-up study found 75% of BN pts did eventually become pregnant (no difference from control group)



Infertility in EDs

- Many studies have found an increase in prevalence of EDs in infertility clinics, while others have not
 - One small study found 20.7% of pts met criteria for a past or current ED (Freizinger et al., 2010); which is 5x the US prevalence rate
 - Another study found a high rate of 17% of pts with EDs (Stewart et al., 1990)
 - In contrast, a recent study by Rodino et al (2016) did not find an increase in lifetime EDs compared to the general population, but did find disordered eating symptoms to be elevated in pts diagnosed with an ovulatory disorder
 - Infertile patients have been found to be more likely to have BED than fertile controls (Sbaragli et al., 2008)
 - Higher scores on drive for thinness and bulimic symptoms but NOT dietary restraint or body dissatisfaction (Cousins et al., 2015)

Women may be too ashamed or afraid to share their ED history with providers



Fertility and menstrual cycle disturbances: Epidemiology and predictors

- In AN pts, 66-84% have amenorrhea and an additional 6-11% have oligomenorrhea (infrequent menstruation). Menstruation and fertility can be delayed in 30% of patients even if one reaches a normal BMI
- In BN pts (even at normal BMI) more likely to have menstrual disturbances with 7-40% experiencing amenorrhea and 36-64% with oligomenorrhea
- Strongest predictors of menstrual cycle disturbances: low body weight, caloric restriction/ low kcal intake, high level of exercise
- Binge eating also associated with oligomenorrhea



Fertility and menstrual cycle disturbances: Treatment

- Treatment: weight restoration in AN → 90% IBW or 15-20th BMI percentile in adolescents. In pts previously overweight they often need a higher weight than the 90% IBW, so at or above the weight menstruation stopped may be a better goal
- Oral contraceptive pills not recommended – not helpful and may mask an important ED symptom
- In BN and pts at normal weight- stabilization of ED behaviors will generally result in normalization of the menstrual cycle over time. If overweight (BN or BED pts) weight maintenance initial recommendation/goal



Fertility and infertility: Polycystic ovarian syndrome

- Two of 3 criteria: oligo or anovulation; clinical/biochemical hyperandrogenism; polycystic ovaries
- ~8-10% of reproductive age women have PCOS
- Genetic component with 35-40% risk if first degree relative affected
- Associated with obesity (35-65% obese with 80% prepubertal obesity)

- BN and BED as well as disordered eating associated with PCOS (up to 75% of BN pts have polycystic ovaries and 33% of PCOS pts have bulimic eating patterns)
- PCOS commonly associated with infertility (anovulation)
- Treatment focuses on weight and nutritional stabilization
 - OCPs for menstrual cycle regulation
 - Metformin may be helpful for regulating menses and fertility
 - Antiandrogens (e.g., spironolactone): contraception is mandatory!



Fertility and infertility: Functional hypothalamic amenorrhea

- Term used to describe amenorrhea, with low serum gonadotropins and estradiol, and, usually, evidence of a precipitating factor (exercise, low weight, stress). Diagnosed after other causes of amenorrhea are excluded
- Associated to AN and low body weight as well as “stress” and psychological disturbances
- Treatment involves weight restoration (if applicable), nutrition therapy, moderating physical activity and CBT may be helpful for some patients depending on psychological factors
- Ovulation induction is NOT recommended prior to weight restoration



Fertility and Infertility: Assisted reproductive technology (ART) in EDs

- ART: any fertility tx in which both egg and sperm are handled (most commonly IVF)
- Ovulatory disorders more common etiology of infertility in IVF population among ED pts. Limited evidence base but one large cohort study found fetal outcomes reassuring in women with severe EDs (Assens et al., 2015)
- A case report of a pt with chronic AN who underwent IVF documented several complications: hyperemesis, thrombocytopenia, emergent c-section, LBW (Toki et al., 2014)
- A case series reported on a pt with AN who underwent IVF who had an induction of labor preterm for ED related complications as benefits thought to outweigh the risks to mother and fetus (Spada et al., 2018)

Strongly recommended to treat the eating disorder and be at a normal weight prior to undergoing ART: 1) may not need ART if underlying disorder resolved and 2) may be associated with worse outcomes to mother and fetus if proceed with active ED

- Comprehensive team approach is very important!



Case # 3

- **How would you manage this patient?**
- Infertility suspected to be 2/2 hypothalamic dysfunction resulting in anovulation (FHA)
- Restoration of regular menstrual cycles (ovulation) and thus fertility can be delayed in a subset of individuals with hx of AN even after weight restoration
- Would target pathologic eating disorder behaviors- provide psychoeducation, dietary counselling, therapy (group or individual CBT, support groups) and option to add SSRI, especially if active anxiety/depression symptoms



Preconception Counseling

- Ask reproductive age patients about desire for childbearing
 - If pregnancy undesired ask if sexually active and using contraception and provide psychoeducation on risk for unplanned pregnancy even in absence of menstruation
 - If pregnancy desired may wish to discuss possible reduced fertility in some patients even if ED in remission and potential increase in complications during pregnancy if active eating disorder symptoms (refer to pregnancy module)
 - Recommend treating active eating disorder symptoms prior to conception and weight restoration (if applicable)
 - May discuss anticipatory fears of changes in body shape/image and weight gain prior to conception and importance of good nutrition for the fetus
 - If on psychotropic medications for an ED or another comorbid condition initiate risk/benefit discussion at this time of continuing medication while TTC
 - Always try to coordinate and collaborate on tx with PCP and/or OB



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