# Sexual Co-Morbidity

- Major depressive disorder
- Obsessive compulsive disorder
- Post traumatic stress disorder
- Anorexia nervosa
- Schizophrenia
- Social phobia
- Panic disorder

Lindal & Steffanson, SPPE, 1993; Wiederman et al, IJEP, 1996; Kennedy et al, JAP,1999, Kockett et al, JAD,1999; Minnen & Kampman, SRT,2000; Kivela & Palhala, IJSP,1988 Aisenberg et al, JCP, 1995; Aversa et al, IJA,1995; Bodinger et al, JCP,2002 Arsaray et al, JSMT,2001; Figueira et al, ASB. 2001

# Sexual dysfunction in Depression

- Numerous studies have found decreased libido and erectile problems to be common in depression

Mathews & Weinnnan , ASB, 1982

# Proposal

- It has been proposed that the relationship between depression and erectile dysfunction is bidirectional
- An increased prevalence of erectile dysfunction in depressive illness has been established
- An improvement in depression has been observed in depressed men successfully treated for erectile dysfunction

Makhlouf et al, Urol Cl NA 2007

# Sexual dysfunction and depression

- 134 patients with untreated depression

- 40-50% decreased libido
- 40-50% decreased arousal
- 15-20% delayed orgasm

Kennedy et al, JAD, 1999

# Treatment of Erectile Dysfunction

- Phosphodiesterase Inhibitors

- Sildenafil ( Viagra)
- Tadalafil ( Cialis)
- Vardenafil (Levitra)

Wylie & Mac Innes, 2005

# PDE-5 Inhibitors

- Cyclic guanosine mono-phosphate (cGMP) determines the extent of corporeal smooth muscle relaxation
- PDE-5 inhibitors block the breakdown of cGMP

# PDE-5 Inhibitors

- The three available PDE-5 inhibitors have similar efficacy and side effects
- Tadalafil has a half-life of 17.5 hours whereas sildenafil and vardenafil have half-lives of around 4 hours

# Common side effects

- Facial flushing
- Headache
- Dyspepsia
- Rhinitis
- Transient visual disturbances

# Cautions

- PDE-5 inhibitors contraindicated if taking nitrates
- Use with caution in patients on multiple anti-hypertensive agents
- Rare risk priapism
- Unclear if increased risk of blindness

# Cabergoline

- Cabergoline has been reported to be effective in men with erectile disorder who are not responsive to phosphodiesterase inhibitors
- Cabergoline has also bee shown to be effective in psychogenic erectile dysfunction

Safarinejad, Int J Impot Res , 2006; Nickel et al, Int J Impot Res, 2007

# Alternatives

- Intracavernosal alprostadil
- ( Prostaglandin  E-1)

- Intraurethral alprostadil

- Vacuum constriction devices

# Treatment of Premature Ejaculation

| | |
|---|---|
| Paroxetine* | 20-40 mg daily |
| Clomipramine | 10-50mg daily |
| Sertraline | 50-100mg daily |
| Fluoxetine | 20-40mg daily |

*Strongest effect

Waldinger, 2005

# On Demand Treatment

- Clomipramine 10-50mg 4-6 hours prior to coitus
- Data concerning on demand use paroxetine inconsistent

# Treatment Female Sexual Dysfunction

- Alpha-blockers, topical alprostadil, oral phosphodiesterase inhibitors all increase peripheral vasocongestion but have no effect on reversing sexual dysfunction in women

Segraves, Exp Opin Emerging Drugs, 2003

# Testosterone

- Numerous double-blind multi-site controlled studies have found that high dose testosterone therapy increases libido in postmenopausal women
- Long term safety of testosterone therapy is unknown

Segraves, J Sex Med 2006

# Testosterone

- Food and Drug Administration did not approve transdermal testosterone for females
- Concern about absence of data concerning  long term safety
- However, it was approved by European Union for treatment of low sexual desire in women

# Androgen Insufficiency Syndrome

- Androgen levels drop precipitously after oophorectomy
- Androgen therapy increases libido in women post-oophorectomy
- Hypothesis that an androgen insufficiency syndrome may explain HSDD

# Androgen Insufficiency Syndrome

- Limitations of androgen assays in females
- Much biologically active androgen in women is formed by intracellular conversion which is not detected by serum assays
- No measure of androgen is predictive of female sexual dysfunction

# Menopausal Transition

- Large Australian prospective epidemiological study found that age, relationship duration, and menopausal transition all had independent contributions to decreased sexual function
- Decreased sexual function after menopause related to decreased estradiol levels

  Dennerstein et al, Fert Ster 2005

# Predictor Postmenopausal Sexual Function

- Strongest predictors of sexual function after menopause were
- Relationship satisfaction and prior sexual function

Dennersten et al, Fert Ster 2005

# Sexual Function and Menopause

- Greater decrease in sexual function after surgical menopause than natural menopause

# Bupropion

- One double-blind multi-site study of women with HSDD found that 4-6 weeks of bupropion 300-450mg per day increased orgasm completion and sexual satisfaction
- The clinical effect was modest although statistically significant

Segraves, J Sex Med 2003

# Conclusions

- A variety of psychopharmacological interventions are available to treat sexual disorders
- Numerous interventions are being investigated

# Post Lecture Exam Question 1

- The most common male sexual dysfunction is:
- 1.premature ejaculation
- 2.hypoactive sexual desire disorder
- 3.erectile dysfunction
- 4.male orgasmic disorder

# Question 2

- The most common female sexual dysfunction is:
- 1.hypoactive sexual desire disorder
- 2. female sexual arousal disorder
- 3. female orgasmic disorder
- 4.dyspareunia

# Question 3

- Which drug is most effective in the treatment of rapid ejaculation?

- 1. paroxetine
- 2. sertraline
- 3. fluvoxamine
- 4. citalopram

# Question 4

- Which drug has been shown to be effective in the delay of ejaculation when used on a PRN basis?
- 1. citalopram
- 2. fluoxetine
- 3. fluvoxamine
- 4. clomipramine

# Question 5

- Low sexual desire is common in both men and women with major depressive disorder.

- True
- False

# Answers to Pre & Post Lecture Exams

1. 1
2. 1
3. 1
4. 4
5. True