

Erectile Dysfunction and Male Infertility

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Erectile Dysfunction

62M not happy with his erectile function

“Just not as hard as it once was”



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Erectile Dysfunction

History

- steady decline for a few years
- sometimes not able to penetrate
- sometimes not able to keep it erect during intercourse
- still has desire
- no issues with ejaculation when it occurs



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Erectile Dysfunction

Other history

- Some LUTS, but not overly bothersome
- No previous urological interventions
- No previous pelvic surgery
- HTN, dyslipidaemia - on medical treatment
- Ex-smoker



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Erectile Dysfunction

Examination

- BP
- Habitus
- *CVS/Neuro/Endo*



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Erectile Dysfunction

Investigations?

Treatment?



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Erectile Dysfunction

Persistent inability to obtain and maintain an erection sufficient for adequate sexual performance



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Erectile Dysfunction

Epidemiology and Risk Factors

- 2.5% men (>40yrs) per year develop ED
- Increases with age
- Often multi-factorial (CVD; endocrine; psychological; medication; chronic disease; pelvic pathology)



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Erectile Dysfunction

Physiology

- Parasympathetic pathways from S2-4
- Cavernosal nerves release NO causing arteriole dilatation
- Progressive dilatation of sinusoids causes compression of sub-tunical venous plexus and emissary veins
- Net effect is increased arterial in-flow with reduced venous outflow = tumescence
- “Rigid” phase is caused by ischiocavernosus muscle contraction causing increased pressure within the corpora cavernosa



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Erectile Dysfunction

Pathophysiology

- Psychogenic
- Medication-related
- Arteriogenic
- Vasogenic
- Neurogenic
- Endocrine
- Anatomical



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Erectile Dysfunction

Assessment

- History
 - Sexual (morning erections, penetrative); IIEF
 - Psych (stressors, relationship, interest, etc)
 - Medical (CVD, DM, medications, neurological, endocrine)
 - Systemic features of hypogonadism
 - Trauma/Urological
- Examination
 - Genitals
 - CVS
 - Neurology



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Erectile Dysfunction

Initial management

- Non-medical
 - smoking cessation
 - Wt loss
 - Exercise
- Altering medications
- Psychological
- *Hormonal*
- PDE-5 Inhibitors



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Erectile Dysfunction

62M

“no real benefit with tablets and they caused headaches”

Referral to urologist

- Non-responders
- Young patients
- *Hormonal abnormalities*
- *Associated penile disorders*



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Erectile Dysfunction

Assessment

- Investigations
 - Risk factor screening (BSL, HbA1c, lipids)
 - *Hormones* (Testosterone x2; TSH; PRL)
 - Specific Ix
 - Radiological (intra-cavernosal injection and penile doppler USS, others)

Erectile Dysfunction

Treatment

- Oral erectogenic medications
 - Sildenafil
 - Vardenafil
 - Tadalafil
- Intra-cavernosal injections
 - Alprostadil
 - Triple therapy
- Surgical and mechanical treatment



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Male Infertility

The inability to conceive naturally after a 12 month period with no contraceptive measures



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Male Infertility

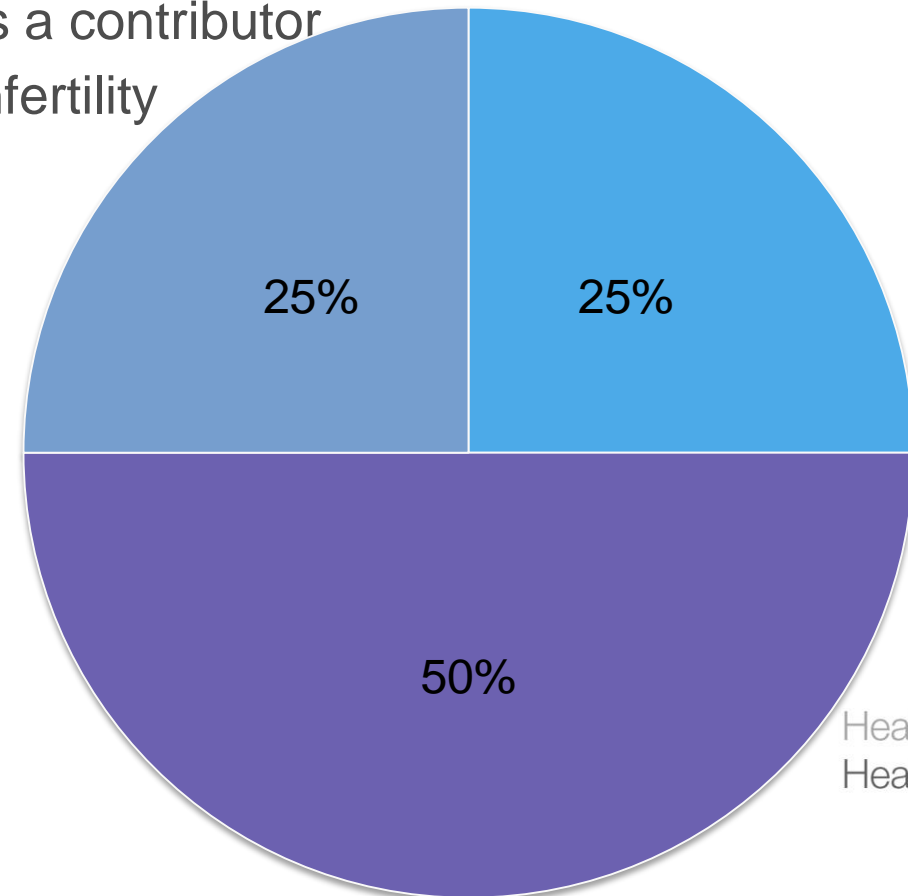
Epidemiology

- Up to 10% of men
- 50% of infertile couples have male infertility as a contributor
 - half of these couples is due to male-only infertility

■ Male Only

■ Female Only

■ Both



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Male Infertility

Physiology

- Requires testosterone production by local Leydig cells (under control of LH)
- Sertoli cells provide support to the development of spermatogonia (require FSH for continued development)
- Spermatogenesis
 - Proliferative mitotic division of spermatogonia to spermatocyte
 - Meiotic division of spermatocytes to haploid spermatids
- Spermiogenesis
 - Spermatids change conformation to become spermatozoa



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Male Infertility

Aetiology

- Pre-Testicular
 - Hypogonadotrophic hypogonadism (decreased FSH/LH, decreased Testosterone)
 - Pituitary failure/dysfunction
 - Hormones (Prolactin, oestrogen)
 - AR dysfunction



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Male Infertility

Aetiology

- Testicular
 - Non-obstructive azoospermia
 - Hypergonadotrophic hypogonadism (decreased testosterone; corresponding increase FSH/LH)
 - Klinefelters
 - Cryptorchidism
 - Y-linked abnormalities
 - Varicocoele



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Male Infertility

Aetiology

- Post-Testicular
 - Obstructive azoospermia
 - Anejaculation
 - Normal hormones
 - Embryological
 - Trauma/Iatrogenic/Infectious
 - Neurological



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Male Infertility

Assessment

- History
 - Primary v Secondary
 - LUTS
 - sexual function
 - previous surgery/trauma
 - Medications
 - Medical history
 - Family Hx



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Male Infertility

Assessment

- Examination
 - Global assessment of chromosomal/genetic and/or hormonal abnormalities
 - Abdo/perineal
 - Peno-scrotal
 - PR



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Male Infertility

Assessment

- Investigations
 - Semen analysis
 - Hormones
 - ?genetic testing
 - Imaging of testes/pelvis
 - Testis biopsy



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Male Infertility

Treatment

- Pre-testicular
 - Stimulate testis development (hCG)
 - Treat secondary causes (e.g. prolactinoma, hormonal abnormalities)
- Testicular
 - Surgical correction (of varicocele, cryptorchidism)
 - Epididymal/testicular extraction for Dx and ICSI
 - Genetic counselling/adoption for Y micro-deletions
- Post-testicular
 - If able, correct obstruction
 - Testicular/epididymal extraction for ICSI



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