Management of fertility in the HIV clinical setting

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Content of Presentation

• Providing Context – T. Crankshaw
• Biomedical Interventions for Fertile and Infertile Couples – S. Mould
• Proposed Planned Pregnancy Clinic at McCord – J. Giddy
Fertility Desires

• Growing body of literature suggests that men and women living with HIV desire children
• Documented pregnancy rates approaching those in HIV-negative partnerships

Unintended Pregnancy

• High rates of unintended pregnancy
• Globally
  – US: ~50%
• South Africa:
  – 61% all first pregnancies and 46% of all second pregnancies were unintended
  – 84% of all pregnancies in HIV-positive women are unintended

Unintended Pregnancy

• Major cause of MM and IM
Unintended Pregnancy

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• Poorer:
  – Maternal mental health
  – Likelihood of B/F
  – Quality of Mother-Child relationship
  – Mental and physical health of child
Causes of Unintended Pregnancy

- Lack of knowledge/experience with contraception, no contraception, inconsistent/incorrect use of contraception, contraception failure
- Sexual coercion/abuse
- Lack of SRH knowledge
- Lack of planning/ambivalence
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• Complex nature of pregnancy intention in that many pregnancies are desired, but not explicitly planned

McQuillan et al. 2011
Unintended Pregnancy

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• Spectrum: unwanted ← → wanted

• Unwanted: Contraceptive options

McQuillan et al 2011
Unintended Pregnancy

• Wanted:
  – HIV serodiscordance/concordance
  – Vertical and horizontal HIV transmission

Conceptual framework of the processes and considerations involved in periconception decision-making and behaviour amongst heterosexual HIV serodiscordant dyads

Crankshaw, Matthews, Giddy, Kaida, Ware, Smit, & Bangsberg (under review)
Periconception Decision-Making

• Important for clinicians to understand the context of reproductive decision-making, perception of periconception risk, and periconception risk reduction behaviour

• Relationship factors, such as intimate partner violence, directly affected sexual risk behaviour

• Most HIV-affected couples do not seek family planning advice from HCP
Working with Individuals & Dyads

• Most couples were not aware of non-condom-based strategies to reduce the risk of horizontal HIV transmission.
• Misunderstanding over serodiscordance
• Key role of men in periconception decisions - unintended pregnancy by the female was often desired by the male
• Little discussion on sexual issues between couples
Non Biomedical Interventions

• Assessment of GBV, mental health, psychosocial

• Couples counselling as a way to promote:
  – Inclusion of men in discussions regarding contraception and safer sex practices
  – Good communication between the couple
  – Raise awareness of gender norms and GBV

• Parenting courses
Take Home Message

• For optimal outcomes do not only focus on biomedical care
• Awareness of the complex psychosocial contexts patients come from
• Recognition of the need to work within multidisciplinary teams
• Ensure strong referrals/linkages/in house psychological, psychiatric and social services
Expanded outcomes

Reduced Maternal, Perinatal and Infant M&M

Promotion of mental health

Strengthen families and relationships
Fertility desires

• In USA – approx 30% HIV infected individuals desire children
• SA study showed figure of approx. 50% (Cooper 2009)
  – Similar for men and women
  – Higher if lower no. of children and on ART
  – Only 19% of women and 6% of men discussed fertility with HCW
Concerns regarding fertility

- Transmission to partner
- Vertical transmission
- Sub fertility related to HIV
- Suboptimal obstetric outcomes
  - Including potential ADR’s of ARV’s
- Reduced life expectancy of parents
Life expectancy

• Western setting
  – Uk average life expectancy in HIV 66 yrs
    
    (May, M 2010)

• Africa
  – Uganda general life expectancy 55yrs
  – Average survival post diagnosis of 25yrs in HIV pos

  (Mills, EJ 2011)
Infertility

Patients usually attempt spontaneous conception first

Infertile couples overrepresented in preconception care

Always consider underlying infertility
Some infertility pointers

• Detailed history of any time periods off hormonal contraception
  – Ask specifically about consistency of condom use
• Previous treatment for PID
• Oligomenorrhoea / Metrorrhagia
• Pelvic pain / dyspareunia
• Previous pelvic surgery
Reasons for infertility - female

• PID
  – *Adisuyan 2008* showed higher HIV rates in Nigerian women with tubal occlusion than in general population

• Anovulation
  – 48% cycles anovulatory in study by *Clark 2001*

• Cervical dysplasia ➡️ LLETZ / cone biopsy
  – Sperm capacitation impaired by poor mucus
Reasons for infertility - male

• Sperm quality
  – Data are inconsistent
  – Most studies show reduced quantity and impaired motility in HIV pos men
  – ARV’s may damage sperm
  – NNRTI’s esp EFV seem to be worst

(Lambert – Niclot 2011)
General approach

• Detailed obstetric/gynae/HIV history
• Couple’s baseline HIV status / CD4 / VL critical to effective management
• Counselling
  – Address risk of MTCT up front (<2%)
  – Most patients overestimate risk
  – Moderate expectations of success rates for certain interventions
    • Costs of interventions quite high
    • If underlying infertility – may be untreatable with resource constraints
• Folate 5 mg /day
Managing Horizontal Transmission

• Manage according to specific scenario

CONCORDANT : Both HIV pos

DISCORDANT : Male pos / Female neg
Female pos / Male neg
Concordant status

• HIV Superinfection risk poorly quantified
  – Can offer sperm washing if couple request maximum risk reduction
• Transmitted ARV resistance
Concordant status

- Aim for VL suppression
- Consider circumcision
- Timed intercourse
  - Calculate ovulation day
  - Basal body temp (0.2°C)
  - Consider ovulation induction
- Refer gynae if no conception in 9 months
Discordant status – male positive

TIMED INTERCOURSE

vs

SPERM WASHING
Discordant status – male positive

- Aim for VL suppression regardless
  - No documented transmission with undetectable VL
  - HPTN 052 trial findings (Cohen 2011)

- Issues around timed intercourse
  - Viral load in semen vs plasma
    - 6% detectable semen with undetectable plasma VL (Lorello 2009)
  - ARV penetration into semen – TDF / FTC: 4-6x
  - Role of PrEP – esp. vaginal tenofovir
Discordant status – male positive

- Issues around sperm washing
  - Not feasible in resource constrained setting
  - McCord: approx R1600 per cycle overall
  - HIV remains detectable in some samples (not tested for locally)
- Success rates
  - 14.5% per cycle (*Semprini* – 1998)
  - 19% per cycle (*Servasi* – 2007)
  - Up to 78% with repeated cycles
  - Similar to non HIV rates
Discordant status – male positive

• A practical approach?
• Ovulation induction useful adjunct
  – clomiphene citrate day 2 – 6
• Counsel on risks and success rates of techniques
• Remember effect of smoking/ alcohol on sperm quality
Discordant status – female pos

- Stop Efavirenz pre conception
- Self insemination
  - Condom vs clean specimen jar
  - Syringe to insert into upper vagina
- Less controversy around CD4 threshold for ARV’s
Conclusion

• Address fertility desires otherwise patients will opt for unsafe conceptions
• Be aware of basic interventions for risk reduction
• Refer to gynae for infertility or male positive discordance