

Background

Hepatitis B, C and HIV virus is contained within semen (principally seminal plasma and leukocytes, but Hep B virus may also integrate into sperm themselves) and therefore pose a risk of sexual transmission from positive male to sero-negative female partner. Conversely, transmission of these viruses from infected female to male partner is also possible. Repromed therefore has a duty of care to identify infected individuals to minimise sexual and vertical transmission of these viruses. Management strategies depend on the virus and are outlined below.

Hepatitis B

- Studies suggest up to 25% risk of transmission from a sero-positive partner to their sero-negative partner through sexual exposure. Therefore, as an effective vaccine exists to prevent Hepatitis B, **if a sero-discordance situation is identified the sero-negative partner should be referred to their GP for active immunisation and consideration of passive immunisation until active immunisation protective status is confirmed.** Condoms should be used in the interim.
- If a woman is diagnosed as Hepatitis B positive they should have their current health status assessed (LFTs, α FP, liver ultrasound) and referred to an appropriate specialist if any abnormality in liver function is identified before considering fertility treatment.
- **Transmission of Hep B virus from an infected male to his partner can be best minimised by delaying ART treatment or attempts at natural conception until after Hep B immunisation course has been completed and adequate levels of protective antibodies confirmed.** Sperm washing does NOT remove all risk as Hep B virus has been identified incorporated into sperm (1).

Hepatitis C

- No vaccine (active or passive) exists for Hepatitis C. However antiviral medications are now available that eliminate the virus in 95% of patients within 6 months (1). Therefore, **if a woman is found to be positive for Hepatitis C consideration should be given to refer her to an infectious disease specialist/ hepatologist for antiviral therapy, especially if her LFTs are abnormal before commencing fertility treatment. Hepatitis C antivirals may be teratogenic and therefore conception is ideally delayed until 6 months after completion of therapy.**
- While not a common mode of transfer, sexual transmission of Hepatitis C from a positive to a negative partner is possible. Therefore sero-discordant couples should be advised to use barrier contraception and minimise risk of transmission using ART.
- If the female partner is positive and male negative artificial insemination using IUI or alternatively IVF if clinically indicated removes any risk of virus transmission to the man.



- If the female partner is negative and male positive for Hepatitis C the risk of transmission can be reduced to extremely low levels using IUI or IVF with density gradient washed sperm. This is because sperm themselves do NOT contain the Hepatitis C virus. No case of viral transmission has been seen using this technology in over 4000 cases of sero-discordant IUI and 700 cycles of IVF (1).
- Women positive for Hepatitis C have a 6% risk of transmitting Hep C to their baby. Breast feeding is not contraindicated.

HIV

- 5% risk of sexual transmission during attempts at conception in sero-discordant couples. This risk can be minimised through use of anti-viral and timed intercourse to only the time of ovulation but cannot be totally removed. As such this type of management should not be advocated by Repromed staff and only used if mandated by the couple.
- If sero-discordance is noted on testing the couple should be advised to use barrier contraception (condoms).
- **Any women noted to be HIV positive for the first time on Repromed screening must be referred to an infectious disease physician for initiation of anti-viral therapy before initiating fertility treatment. Pregnancy should be delayed until viral counts are low (ideally < 200 copies per ml).**
- Viral transmission from a man to a sero-negative woman can be minimised using density gradient washing of sperm and either IUI or IVF. As IUI has reduced chances of success per cycle and requires a greater volume of sperm there is a theoretical higher risk of inadvertent HIV transmission with IUI than IVF-ICSI. As HIV is not incorporated into sperm the risk of HIV transmission using ICSI is believed to be absolutely zero and no documented sero-conversion case has occurred using IVF-ICSI (1). **As such Repromed's policy is to prefer IVF-ICSI in sero-discordant couples where the male is HIV positive**, but consideration to use IUI can be made with appropriate patient counselling and discussion with the Medical Director.
- Active HIV infection increases viral load in semen as well as semen quality. **As such it is advisable to delay all forms of ART until the mans viral load has been minimised by anti-viral therapy under the supervision of an infectious disease consultant.**
- The referral letter to the obstetrician should highlight the HIV status of a sero-positive women so that appropriate precautions can be taken to minimise vertical transmission risk (elective LSCS, no breast feeding).

When:

Patients undergo serology screening to determine infectious status as per the Infectious Disease Screening Policy.

How:

- Infectious diseases including Hep B/C/HIV/Syphilis/Chlamydia/Gonorrhoea and HTLV1 are reportable infectious diseases under law. For a full listing of reportable diseases refer to the State and Territory Department of Health websites.
- Verbal consent to inform their partner should also be obtained at this appointment and a follow up appointment with both partners made to ensure the sexual partner is aware of their partner's infectious status.
- Once infectious status is known, where the female patient is infectious, but the male patient isn't, ensure the female patient's infection is managed prior to commencement of treatment, to minimise transmission risk to fetus/baby
- Where the male patient is infectious and the female patient is not, consideration must be made to delay treatment until patient has commenced treatment for the infection, to minimise viral load, to minimise transmission risk.
- Where the male patient is infectious and the female patient is not, avoid using technologies that have a greater transmission risk, e.g. OI and IUI. IVF with ICSI treatment has the minimal transmission risk.
- Where any of the screening tests of donors are confirmed as positive, donor gametes and embryos should not be used as it poses a high risk. The use of these donor gamete or embryos may be allowable in certain circumstance only in consultation with the Medical Director and specific consent for use must be sought from the recipient. If this is not provided, the sperm, oocyte or embryo should be discarded.

Mandatory reporting of Infectious diseases

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South Australia

- The treating clinician must notify SA Health of cases suspected of having or diagnosed with specified infections or diseases by completing the appropriate notification form to SA Health
- All infections should be notified within three days of suspecting or confirming a diagnosis.



- More information can be sought from the Communicable Disease Control Branch (CDCB) on 1300 232 272.

Northern Territory

- The treating clinician must notify the Centre for Disease Control (CDC) Department of Health when diagnosing or seriously suspecting a disease listed on the Northern Territory schedule of notifiable diseases.
- Notification must be done by phone for diseases listed as urgent by the CDC or via submission of a notification form for non-urgent notifiable diseases.
- For more information contact the local Public Health Unit (PHU)

References:

Hanson BM, Dorais JA. Reproductive considerations in the setting of chronic viral illness. Am J Obstet Gynecol. 2017 Jul;217(1):4-10

The above information can be found in “Reproductive health management clinical guidelines” document, on the Repromed intranet. Please refer to the full document.