

# هياتيت B و ART



Dr. Farnaz Montazeri  
Fellowship of infertility

- 
- ▶ What is the prevalence of hepatitis B virus?
  - ▶ How should testing of hepatitis B status prior to medically assisted reproduction be performed?

- 
- ▶ What are the risks of hepatitis B virus transmission through vaginal/anal intercourse?
  - ▶ Is there a threshold below which transmission of hepatitis B virus is unlikely?

- ▶ Which technique (IUI/IVF/ICSI) for medically assisted reproduction should be used in couples with hepatitis B virus?
- ▶ Can hepatitis B virus DNA be detected in oocytes/ sperm/ placenta?
- ▶ Does hepatitis B virus/treatment of hepatitis B virus before medically assisted reproduction impact the outcome of medically assisted reproduction?

- ▶ Which techniques can be used to prevent/reduce hepatitis B transmission during assisted reproduction?
- ▶ Does the plasma viral load correlate with hepatitis B virus detection in semen?

- 
- ▶ Which interventions can be used to reduce/avoid vertical transmission of hepatitis B virus to the newborn?

# List of all recommendations

Chapter	No.	Recommendation	Strength	Quality of evidence	Justification	Remarks
<b>Hepatitis B virus</b>						
<b>Prevention of transmission before medically assisted reproduction</b>						
A2	1	Partners of hepatitis B virus (HBV) positive individuals should be vaccinated.	Strong	⊕○○○	The availability of highly effective vaccines outside and during pregnancy allows prevention of horizontal and vertical transmission.	
A2	2	Barrier contraception should be used until the completion of the HBV vaccination protocol.	Strong	⊕⊕○○	Providing a successful vaccination course, the risk of HBV horizontal transmission is eliminated during unprotected intercourse for spontaneous conception.	
A2	3	All patients with an active or chronic HBV infection must be reviewed by an infection disease/liver specialist before initiating any medically assisted reproduction (MAR) treatment.	Strong	⊕○○○	It has been reported that there is a direct correlation between maternal viral load and the risk of viral vertical transmission	
A2	4	Commencement with MAR in patients positive for HBV should be a joint decision between the infectious disease/liver specialist and the fertility doctor.	Strong	⊕○○○		
A2	5	In the case of the female testing positive for HBV, the possibility of viral vertical transmission, as well as the availability of vaccination during pregnancy and new-born prophylaxis should be discussed.	GPP			
<b>Assisted reproduction techniques and impact on outcomes</b>						
A3	6	The cause of infertility should dictate the specific technique (IUI/IVF/ICSI) used for MAR in couples where one or both partners test positive for HBV.	Strong	⊕○○○	From the perspective of horizontal and vertical transmission, there is currently not enough evidence to recommend one technique (IUI/IVF/ICSI) over another in patients infected with hepatitis B.	

A3	7	Women infected with HBV should be informed that MAR does not eliminate the risk of vertical transmission.	GPP		
A3		HBV can be detected in sperm cells, oocytes, granulosa cells and embryos. This equates with a theoretical risk of vertical HBV transmission that remains to be proven.			Conclusion
A3		Existing evidence cannot clarify if the presence of HBV infection in the male impacts the outcomes of MAR. Multiple studies showed no differences in reproductive outcomes following MAR when comparing seronegative with HBV seropositive women.			Conclusion

#### Prevention/reduction of transmission during assisted reproduction

A4	8	Men testing positive for HBV should be informed that no current semen preparation technique has been demonstrated to select HBV DNA free spermatozoa for use in MAR.	GPP		
A4	9	Routine semen processing according to the ESHRE guideline on good practice in the IVF laboratory should be used when performing MAR in men testing positive for HBV.	GPP		
A4	10	Based on the current evidence, HBV DNA testing on seminal fluid or sperm is not recommended.	Strong	⊕○○○	Considering that we have recommended before that HBV negative women should be vaccinated, the measurement of HBV DNA in semen is not necessary.

#### Reducing/avoiding vertical transmission

A5	11	Caesarean delivery is not recommended on the basis of maternal HBV positivity alone.	Strong	⊕⊕○○	There is no evidence that the risk of HBV transmission from mother to child after caesarean section is lower compared to that after vaginal delivery.
A5	12	Breastfeeding is not contra-indicated in women testing positive for HBV.	Conditional	⊕⊕○○	There is no association between breast feeding and the risk of HBV transmission from mother to child. Breast feeding has significant health benefits.
A5	13	All neonates born to HBV positive couples should be vaccinated.	Strong	⊕⊕⊕○	Current evidence shows that perinatal transmission of HBV, which is responsible for the majority of cases of chronic HBV infection, can be prevented by vaccination.

A5	14	Administration of hepatitis B immunoglobulin (HBIG) in addition to vaccination is recommended for children born to mothers testing positive for HBV.	Strong	⊕⊕○○
A5	15	HBIG administration should follow local or national guidelines.	GPP	

# Summary

Hepatitis B	Male testing positive 	Female testing positive 	Couple testing positive 
BEFORE MAR	Vaccinate non-infected partner Consult with infectious disease/liver disease specialist		
		Discuss: - risk of viral vertical transmission (not eliminated by MAR) - new-born prophylaxis	
DURING MAR	IUI, IVF or ICSI depending on infertility work-up		
	Semen processing/testing - Routine semen prep technique - HBV DNA testing of semen not recommended		
AFTER MAR	Caesarean section not recommended		
	Breastfeeding not contra-indicated		
	Vaccination of the neonate	Vaccination of the neonate + HBIG administration	

Figure 1: Summary of management of medically assisted reproduction in patients testing positive for hepatitis B virus.

