Chronic Hepatitis B
Current Drugs and Indications for Treatment

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Case

35 year old male who presents with chronic hepatitis B

Labs

- HBsAg+ ≥ 6 months, HBeAg+
- HBV DNA >1,000,000 IU/mL
- ALT < 35 U/L
- Platelet count within normal limits
- Fibroscan F0/1
- US abdomen no cirrhosis

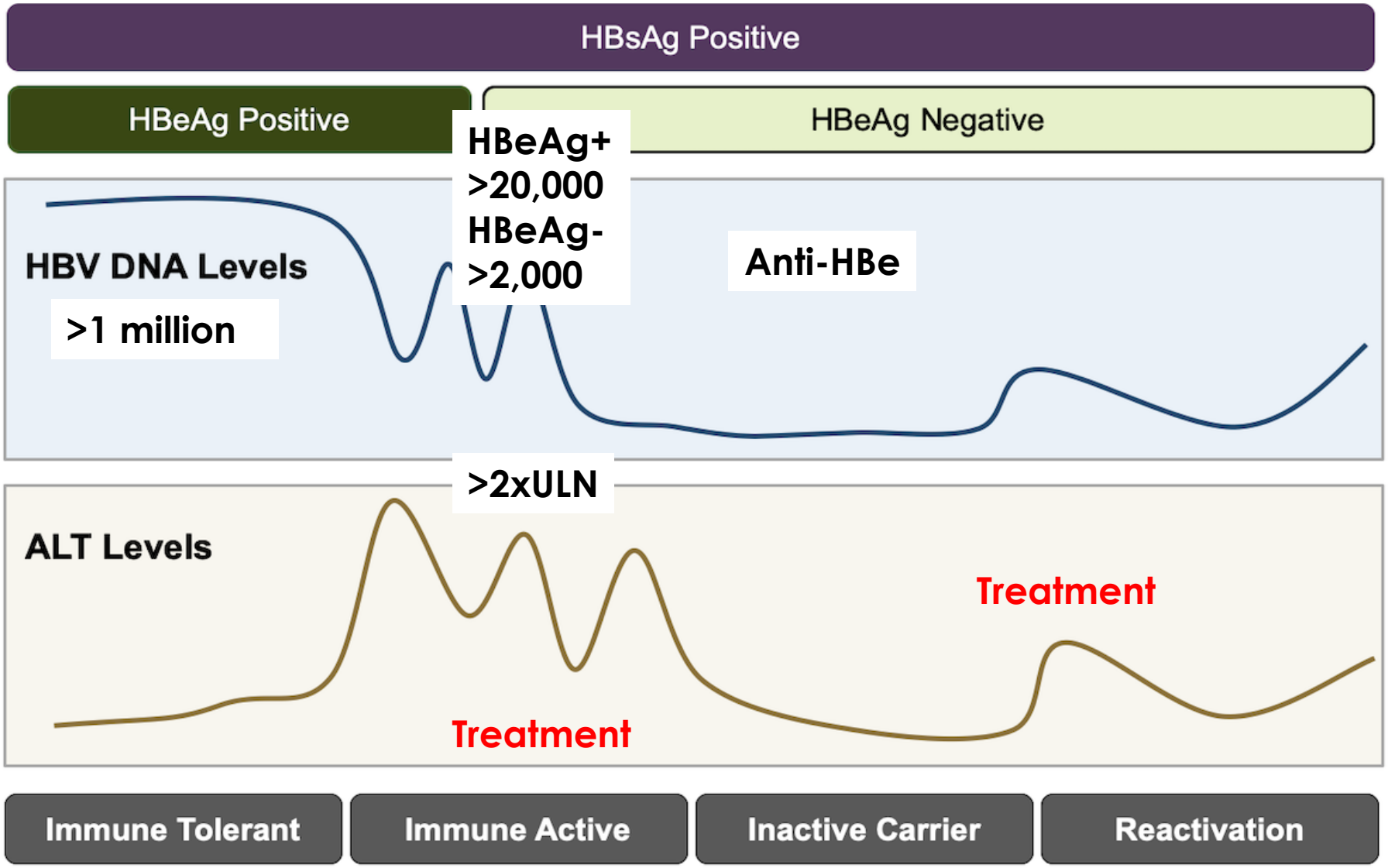
Patient would like to discuss possible treatment options

Chronic Hepatitis B

- HBsAg present ≥ 6 months
- HBV viral load ranges from undetectable up to billions
- HBeAg, HBeAb status helps determine immune phase
- ALT level normal to elevated
- Liver biopsy/non invasive tests (chronic hepatitis, variable necroinflammation with/without fibrosis)

Non Invasive Testing

- Serum panels (Fibrosure, FIB-4, APRI)
- Elastography more accurate however can overestimate fibrosis with high levels of necroinflammation (high ALT levels)
- AASLD 2018 guidelines ULN ALT 25 U/L women and 35 U/L men


HBsAg Positive
HBeAg Positive
HBeAg Negative
HBeAg+
>20,000
HBeAg-
>2,000
HBV DNA Levels
>1 million
Anti-HBe
>2xULN
ALT Levels
Treatment
Treatment
Immune Tolerant
Immune Active
Inactive Carrier
Reactivation

Immune Tolerant

- Endemic regions (Asia, Sub-Saharan Africa)
- 90% perinatal transmission cases will develop CHB

- HBeAg+ with HBV DNA very high >1 million IU/mL
- Normal or minimally elevated ALT
- Liver biopsy/non invasive tests show minimal inflammation and no fibrosis
- No treatment
- Monitor labs every 3 – 6 months

Why no treatment for Immune Tolerant?

- Estimated 30 years until reach immune active phase requiring treatment
- Immune system is “tolerant” to virus
- Do not respond well to antivirals
- Less likely to see HBeAg seroconversion, HBsAg loss unlikely
- High rate viral replication - takes longer for viral load decline
- Concerns for long term SE medications and future antiviral resistance

Reasons to treat Immune Tolerant

- >40 years of age with persistent normal/borderline ALT and HBV DNA >20,000 IU/mL consider liver biopsy and treat for ≥ F2

- Other factors to consider:
  - Strong FH cirrhosis/HCC
  - Previous antiviral treatment

Antivirals

PEG Interferon Alpha 2a

- Finite treatment (48 weeks)
- HBV/HDV
- Contraindicated pregnancy, decompensated cirrhosis
- Side effects not well tolerated

Entecavir

- Decompensated cirrhosis increase dose 1mg
- Viral potency
- Avoid with previous lamivudine resistance

Antivirals

Tenofovir disoproxil fumarate (TDF)

- Pregnant women 3rd trimester HBV DNA >200,000 to prevent perinatal transmission
- Concerns for increased renal toxicity and BMD loss (switch to entecavir or TAF)

Tenofovir alafenamide (TAF)

- Prior treatment or antiviral resistance
- HIV/HBV
- Less renal and bone toxicity concerns than TDF

Antiviral resistance

- Avoid monotherapy with **lamivudine, adefovir, or telbivudine** due to high risk of drug resistance
- Check medication adherence
- High HBV DNA level - takes longer time for HBV DNA level to become undetectable

  *Recommended to continue same monotherapy dose and monitor declining HBV DNA levels

Case

- Plan to continue to monitor every 3 - 6 months with labs

  (HBsAg, HBeAg, anti-HBe, HBV DNA viral load, ALT, Fibrosis testing)
- Start treatment for ALT >2xULN, ≥ F2, cirrhosis
- >40 years of age consider liver biopsy and start treatment for ≥ F2
- HCC screening (US every 6 months +/- AFP)

Conclusion

Who to treat with CHB

- Cirrhosis, refer to specialist/transplant center
- Active immune phases
- ≥ F2 fibrosis
- Decision to treat case by case, other factors (age, FH, previous antiviral treatment)
- When in doubt consider liver biopsy

What we can do to help decrease prevalence HBV

- Universal one-time screening adults ≥ 18 years
- Universal vaccination adults 19 – 59 years

Thank you!