MED

Bhumibol Adulyadej Hospital

Simple approach to chronic hepatitis B

Ratchanok Suppawat, MD

Chronic hepatitis B (CHB)

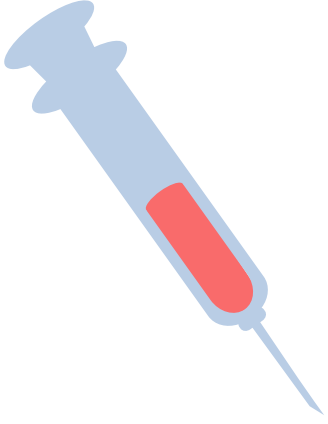
Thailand → endemic area of hepatitis B (consider when prevalence >2%)

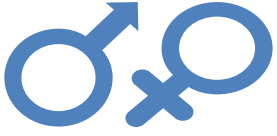
Prevalence about 2.6-5.0% in Thailand

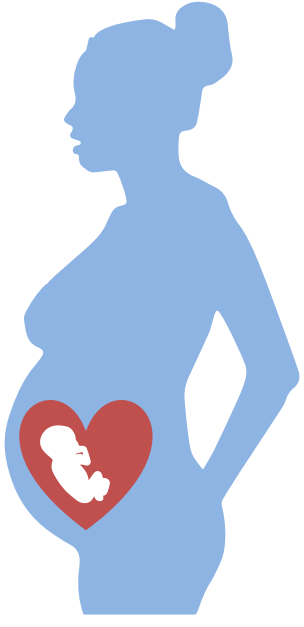
Active viral replication and
long-standing necroinflammatory of liver
strongly effects the rate of progression to
Liver cirrhosis and ***Hepatocellular carcinoma (HCC)***

Until Expanded Program on Immunization(EPI) on 1988,
Thailand has universal hepatitis B vaccination for newborns in 1992
In 2020 prevalence of HBV infection in age < 5 year less than 1%

Route of transmission

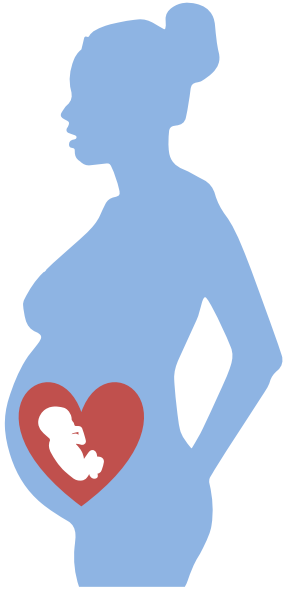






WHO SHOULD BE SCREENED AND VACCINATED

Who should be screened for HBV?



WHO and AASLD 2018 recommendation

-People born in countries with prevalence of HBV infection ≥ 2%

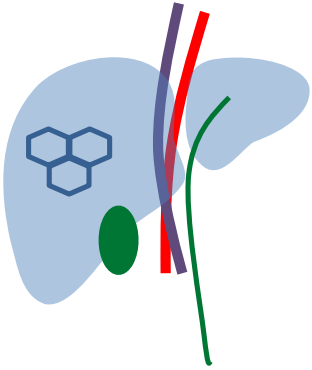
- Pregnant woman

- Infants born to HBsAg-positive mothers*

- Travelers to countries with intermediate or high prevalence of HBV infection*

* Indicates those who should receive hepatitis B vaccine, if seronegative

Who should be screened for CHB?

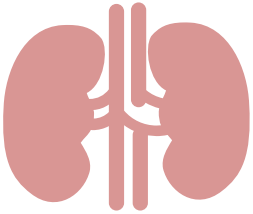


- Household and sexual contacts of people with HBV infection*
- Chronic liver disease ex; HCV, liver cirrhosis, AIH etc.*
- People with elevated ALT levels*
(≥19 IU/L for women and ≥30 IU/L for men), unknown etiology

- People who inject drugs*
- Men who have sex with men*
- People with HIV infection*
- Persons seeking evaluation or treatment for a sexually transmitted disease*

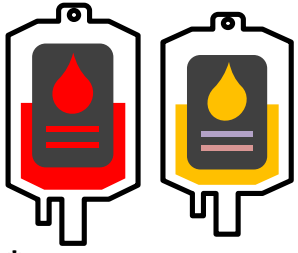
* Indicates those who should receive hepatitis B vaccine, if seronegative

Who should be screened for CHB?



-People with end-stage renal disease and renal replacement therapy* hemodialysis or perioneal dialysis

- Blood and tissue donors
- People requiring immunosuppressive therapy



- Health care and public safety workers at risk for occupational exposure to blood or blood-contaminated body fluids*

-Residents and staff of facilities for developmentally disabled persons*

-Unvaccinated persons with diabetes who are aged 19 through 59 years*

* Indicates those who should receive hepatitis B vaccine, if seronegative

Pre vaccination testing?

Current or previous HBV infection or HBV vaccination ***dose not increase risk of adverse events***

Persons with **high risk** of previous **HBV infection** pre-vaccination testing might reduce costs by avoiding vaccination of immunized persons

Post vaccination testing?

HBV vaccines typically achieve anti-HBs titer > 100 mIU/mL
Low titer of anti-HBs titer ≥ 10 mIU/mL : Seroprotective

Anti-HBs titer **ususally drop over the first 2 years** after vaccination and decrease to non-protective levels <10 mIU/mL over 5-10 years

HBV vaccination results in **strong immunologic memory capable** of preventing infection even in low or undetectable antibody titers
Immunocompetent persons ***Booster vaccine*** dose ***is not recommended***

Sleisenger and Fordtran's Gastrointestinal and Liver Disease 11th Edition.2021

Post vaccination testing?

Recommended testing : HBsAg, anti-HBs and +/- anti-HBc
for the following persons **at 1-2 months after vaccinated**

Infants born to HbsAg positive mothers or unknown status of HbsAg
Health care and public safety workers
Sex partners of HBsAg-positive persons

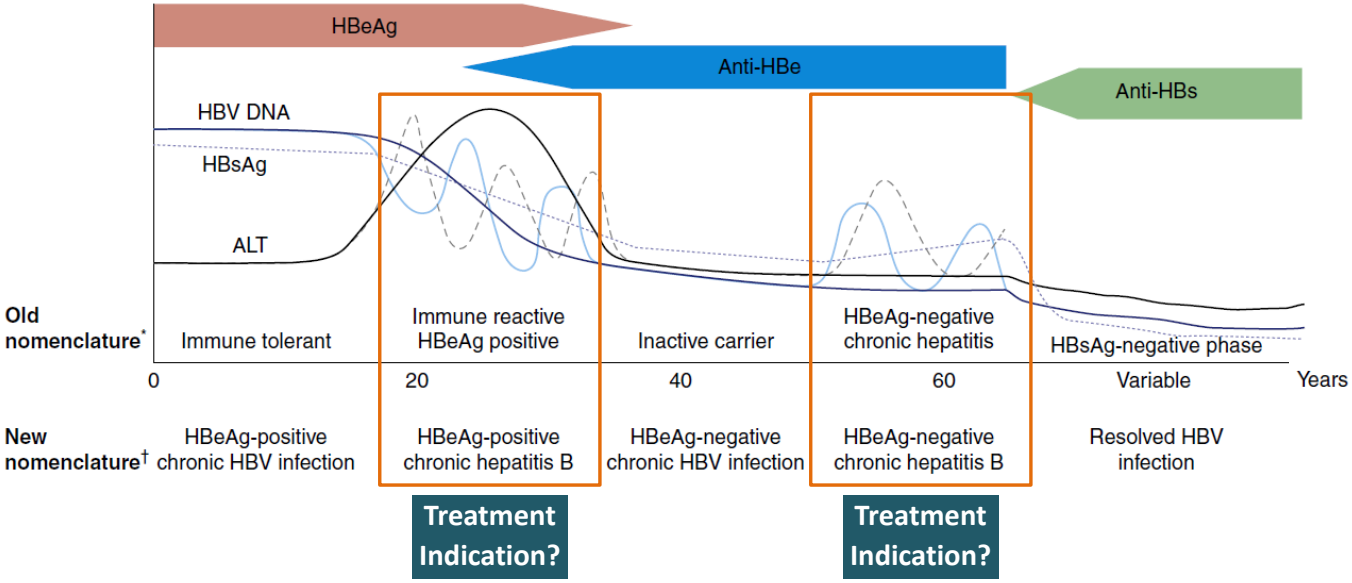
Patients with renal replacement therapy
predialysis, hemodialysis, peritoneal dialysis
HIV-infected persons
Immunocompromised persons
organ or stem cell transplantation, chemotherapy

Lower response rates of HBV vaccination

High-risk patients should ***receive a booster dose when anti-HBs <10mIU/mL***

CHRONIC VIRAL HEPATITIS B

Natural history of Chronic hepatitis B



Sleisenger and Fordtran's Gastrointestinal and Liver Disease 11th Edition. 2021

Natural history of Chronic hepatitis B

	HBeAg-positive		HBeAg-negative		HBsAg-negative
	Chronic HBV infection	Chronic hepatitis B	Chronic HBV infection	Chronic hepatitis B	Resolved HBV infection
HBsAg	High	High/ intermediate	Low	Intermediate	Negative
HBV DNA	$\geq 10^7$ IU/mL	10^4-10^7 IU/mL	<2000 IU/mL‡	≥2000 IU/mL	Undetectable
ALT	Normal	Elevated	Normal	Elevated§	Normal
Liver disease	None/minimal	Moderate/severe	None	Moderate/severe	None
Old terminology	Immune tolerant	Immune reactive HBeAg positive	Inactive carrier	HBeAg-negative chronic hepatitis	HBsAg-negative phase
Progression to cirrhosis		2-5.5% per yr.	0.5-2% per yr.	8-20% per yr.	

Suppression of serum HBV DNA levels lowers the risk of HCC

Sleisenger and Fordtran's Gastrointestinal and Liver Disease 11th Edition. 2021

Indication for treatment

Significant HBV virus that can triggers immunological response

Evidence of significant immune attack

↑ALT or significant fibrosis

Non cirrhotic CHB

Guidelines	HBeAg positive		HBeAg negative	
	HBV DNA IU/mL	ALT/fibrosis	HBV DNA IU/mL	ALT/fibrosis
THASL 2015	≥2,000	>2 ULN and/or Evidence of inflammation/fibrosis	≥2,000	>2 ULN and/or Evidence of inflammation/fibrosis

Guidelines	Compensated cirrhosis	Decompensated Cirrhosis(NA only)
THASL 2015	HBV DNA detect, regardless ALT	N/A

International guideline for decompensated cirrhosis
→ Treatment Irrespective of HBV DNA level

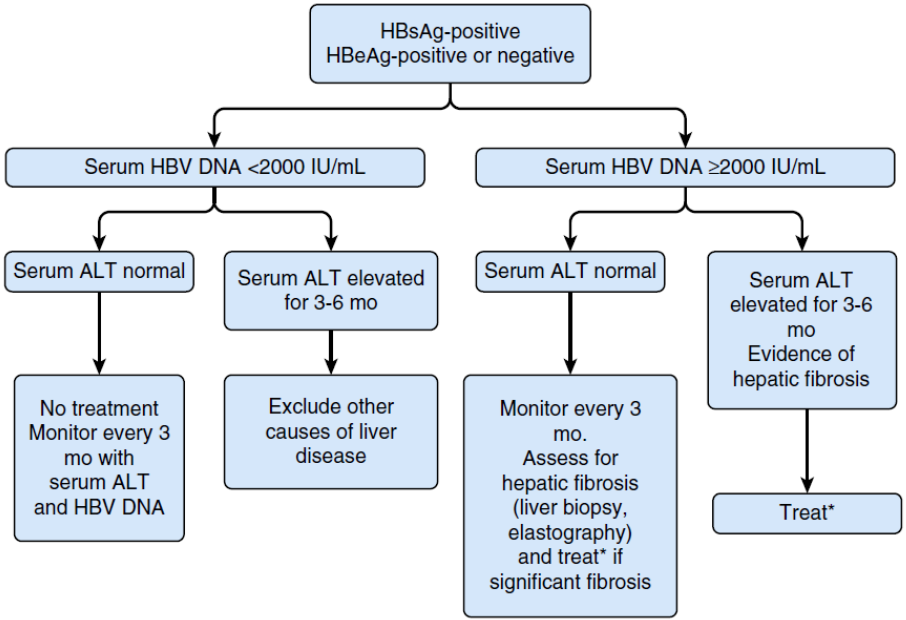
HBV treatment

THASL 2015

Agent	Route	Recommendation	
		Adult	Children
Peginterferon alfa-2a	Subcutaneous	180 µg/wk 48 wks	Not approved
Peginterferon alfa-2b	Subcutaneous	1.5 µg/kg/wk 48 wks	Not approved
Lamivudine	Oral	100 mg once daily	3 mg/kg/day (max 100 mg/day)
Entecavir Dose adjustment if GFR < 50	Oral	0.5 mg once daily 1 mg if resistance LAM	Not approved
Telbivudine	Oral	600 mg once daily	Not approved
Tenofovir	Oral	300 mg once daily	Not approved
Tenofovir Alafimamide Dose adjustment if GFR < 15	Oral	25 mg once daily	Not approved

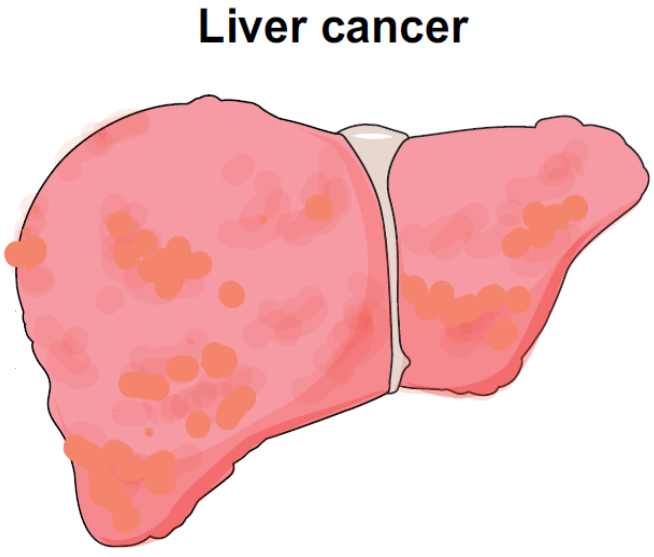
Preferred high barrier to resistance

HBsAg positive or CHB follow up



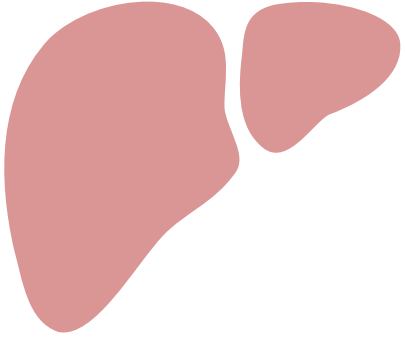
HEPATOCELLULAR CARCINOMA (HCC) SURVEILLANCE

HCC surveillance in CHB



African American > 20 years of age
Asian female > 50 years of age
Asian male > 40 years of age
CHB with a family history of HCC
CHB co-infected with HDV, HCV, or HIV
Persons with HBV cirrhosis (at any age)
Persons with persistent active infection
  high serum levels of HBV DNA and evidence of ongoing liver injury

Modality of HCC surveillance



Ultrasound
Upper abdomen

Every 6 months

Serum AFP
Increase detection rate 6-8%
when ultrasound normal

THANK YOU