IDBR INFECTIOUS DISEASE BOARD REVIEW AUGUST 22-26, 2026

Chronic Hepatitis

David Thomas, MD
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Johns Hopkins Medicine

8/6/2026

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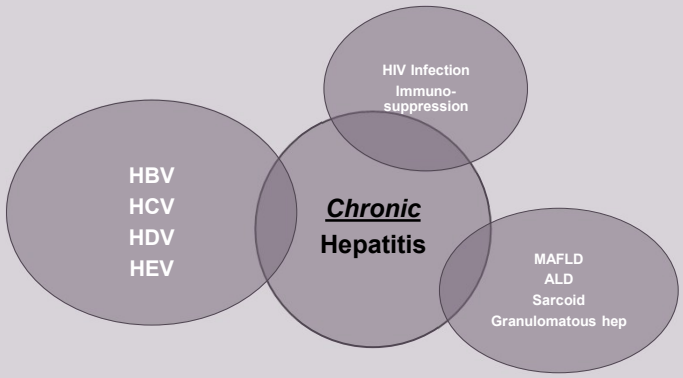
Disclosures of Financial Relationships with Relevant Commercial Interests

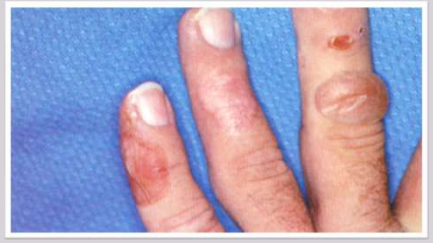
- Data and Safety Monitoring Board: Merck and Rho
- Advisory Board: Excision Bio



Question #1

Case Study: Hepatitis C and a rash

A 44-year-old, anti-HCV and HCV RNA positive man feels bad after a recent alcohol binge. He has a chronic rash on arms that is worse and elevated ALT and AST.



OConnor Mayo Clin Proc 1998

Question #1

Which is the most likely diagnosis?

A. Cirrhosis due to HCV and alcohol
B. Necrolytic acral erythema
C. Porphyria cutanea tarda
D. Essential mixed cryoglobulinemia
E. Yersinia infection

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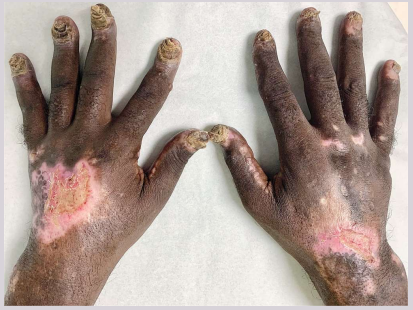
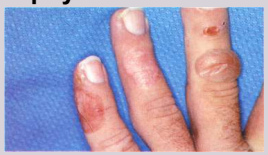
Porphyria Cutanea Tarda Associated with Hepatitis C

Tejesh S. Patel, M.D., and Evgeniva Teterina Mohammed, M.D.

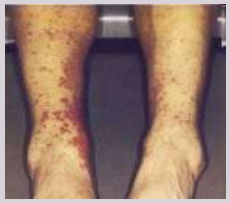


June 10, 2021
N Engl J Med; 384:e86

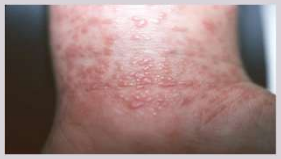
Porphyria cutanea tarda



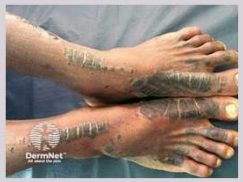
Cryoglobulin vasculitis



Lichen planus

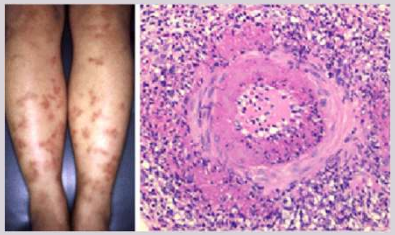


Necrolytic acral erythema

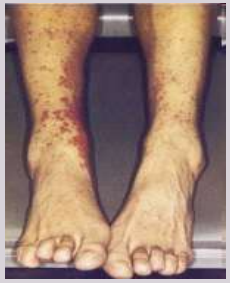


blogspot.com; OConnor Mayo Clin Proc 1998

HBV: Polyarteritis nodosa



HCV: Cryoglobulin vasculitis



blogspot.com; OConnor Mayo Clin Proc 1998; Chen Rheum 2014

Question #2

What is true regarding testing for HCV antibodies?

A. Testing indicated only for those with risk
B. New 4th generation antibody/ag test sensitive for acute infection
C. Indicated for pregnant women
D. Repeat after cure if new exposures
E. Often falsely negative in persons with HIV

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IDSA/AASLD Guidelines

Recommendations for One-Time Hepatitis C Testing

RECOMMENDED	RATING
One-time, routine, opt out HCV testing is recommended for all individuals aged 18 years or older.	I, B
One-time HCV testing should be performed for all persons less than 18 years old with activities, exposures, or conditions or circumstances associated with an increased risk of HCV infection (see below).	I, B
Prenatal HCV testing as part of routine prenatal care is recommended with each pregnancy.	I, B
Periodic repeat HCV testing should be offered to all persons with activities, exposures, or conditions or circumstances associated with an increased risk of HCV exposure (see below).	IIa, C
Annual HCV testing is recommended for all persons who inject drugs, for HIV-infected men who have unprotected sex with men, and men who have sex with men taking pre-exposure prophylaxis (PrEP).	IIa, C

RECOMMENDATION The USPSTF recommends screening for HCV infection in adults aged 18 to 79 years. (B recommendation)

JAMA. doi:10.1001/jama.2020.1123
Published online March 2, 2020.

SEE ENLARGED SLIDE FOLLOWING ENTIRE PRESENTATION

Question #3

Case Study: HCV antibodies and RNA

- 54-year-old man was anti-HCV pos after routine screen by primary
- RNA also pos; moderate ETOH; otherwise well
- CMP and CBC were normal

Which of these is most necessary before treatment?

A. HCV genotype
B. HCV 1a resistance test
C. Elastography
D. HBsAg
E. Repeat in 6 months to be sure chronic

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D. HBsAg*
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All are tested for HBV

- HBsAg pos: treat per HBV guidelines
- Anti-HBc pos: monitor

Bersoff-Macha Ann Intern Med 2017; Thio and Balagopal CID 2015

Staging is Needed to Assess for Cirrhosis (But Not Most Urgent)

Accepted Staging Methods	Not For Routine Staging
• Liver biopsy	• Viral load
• Blood markers (FIB 4)	• HCV genotype
• Elastography	• Ultrasound
• Combinations of 1-3	• CT scan or MRI

Hcvguidelines.org

HCV NS5 RAS Testing is Uncommonly Recommended

Regimen-Specific Recommendations for Use of RAS Testing in Clinical Practice

RECOMMENDED	RATING
Sofosbuvir/velpatasvir NS5A RAS testing is recommended for treatment-naive persons with genotype 3 infection and cirrhosis being considered for 12 weeks of sofosbuvir/velpatasvir therapy. If the Y93H resistance-associated substitution is present, weight-based ribavirin should be added or another recommended regimen should be used.	I, A

SEE ENLARGED SLIDE FOLLOWING ENTIRE PRESENTATION

Wyles, HCVguidelines.org

Question #4

Case Study (cont.): HCV antibodies and RNA

- HBsAg neg; anti-HBc pos
- Elastography (173 kPa) and Fib-4 (5.5) consistent with cirrhosis
- Genotype 1a
- Ultrasound ok

Which can you NOT say is true of treatment?

A. Reduces risk of reinfection
B. Reduces risk of death
C. Reduces risk of HCC
D. Reduces risk of liver failure

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C. Reduces risk of HCC
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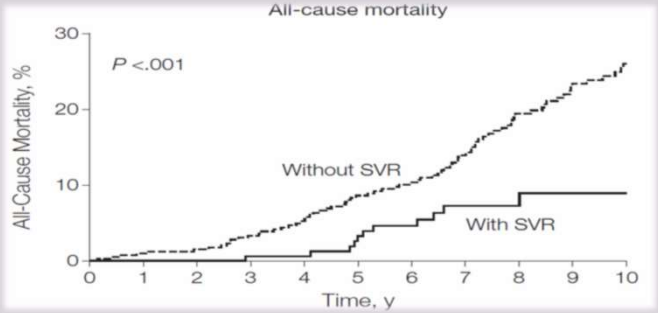
SVR Reduces Clinical Outcomes



SEE ENLARGED SLIDE FOLLOWING ENTIRE PRESENTATION

Van der Meer, *JAMA* 2012. Backus, *Clin Gastro* 2011. Imazeki, *Hepatology* 2003. Shiratori, *Ann Intern Med* 2005. Veldt, *Ann Intern Med* 2007. Berenguer, *Hepatology* 2009.

Question #5

Which is true of initial HCV treatment?

1. Avoid sofosbuvir if renal insufficiency
2. Avoid glecaprevir/pibrentasvir if compensated cirrhosis
3. Avoid glecaprevir if on boosted PI
4. Avoid sofosbuvir/ledipasvir if genotype 1
5. Prolong treatment in person with HIV

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HCV-HIV ART Drug Interactions

		Ledipasvir/ Sofosbuvir (LDV/SOF)	Sofosbuvir/ Velpatasvir (SOF/VEL)	Elbasvir/ Grazoprevir (ELB/GRZ)	Glecaprevir/ Pibrentasvir (GLE/PIB)	Sofosbuvir/ Velpatasvir/ Voxilaprevir (SOF/VEL/VOX)
Protease Inhibitors	Boosted Atazanavir	A	A			
	Boosted Darunavir	A	A			
	Boosted Lopinavir	ND, A	A			ND
NNRTIs	Doravirine		ND		ND	ND
	Efavirenz				ND	ND
	Rilpivirine					
	Etravirine	ND	ND	ND	ND	ND
Integrase Inhibitors	Bictegravir			ND	ND	
	Cabotegravir	ND	ND	ND	ND	ND
	Cobicistat-boosted elvitegravir	C	C			C
	Dolutegravir					ND
	Raltegravir					ND
Entry Inhibitors	Fostemsavir	ND	ND	ND	ND	ND
	Ibalizumab-uiyk	ND	ND	ND	ND	ND
	Maraviroc	ND	ND	ND	ND	ND
NRTIs	Abacavir		ND	ND		ND
	Emtricitabine					
	Lamivudine		ND	ND		ND
	Tenofovir disoproxil fumarate	B, C	B, C			C
	Tenofovir alafenamide	D	D	ND		D

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www.hcvguidelines.com

AASLD AMERICAN ASSOCIATION FOR THE STUDY OF LIVER DISEASES

HCV Guidance: Recommendations for Testing, Managing, and Treating Hepatitis C

IDSA Infectious Diseases Society of America

Test, Evaluate, Monitor | Treatment-Naive | Treatment-Experienced | Unique & Key Populations

Recommended regimens listed by evidence level and alphabetically for:

Treatment-Naive Genotype 1a Patients With Compensated Cirrhosis[a]

RECOMMENDED	DURATION	RATING
Daily fixed-dose combination of ledipasvir (90 mg)/sofosbuvir (400 mg)	12 weeks	I, A
Daily fixed-dose combination of sofosbuvir (400 mg)/velpatasvir (100 mg)	12 weeks	I, A
Daily fixed-dose combination of glecaprevir (300 mg)/pibrentasvir (120 mg)[b]	8 weeks	I, B

[a] For decompensated cirrhosis, please refer to the appropriate section.

[b] Dosing is 3 coformulated tablets (glecaprevir [100 mg]/pibrentasvir [40 mg]) taken once daily. Please refer to the prescribing information. For patients with HIV/HCV coinfection, a treatment duration of 12 weeks is recommended.

SEE ENLARGED SLIDE FOLLOWING ENTIRE PRESENTATION

HCV Treatment Summary

- Test and treat (and stage)
- Two pangenotypic regimens: SOF/VEL and G/P
- **Watch for HBV relapse at week 8 if HBsAg pos**
- No change for HIV (avoid drug interactions), renal insufficiency, acute infection
- Compensated cirrhosis same for G/P and SOF-based except GT3 with resistance

Hepatitis B: 2023 Testing Recs for USA

Universal hepatitis B virus (HBV) screening
- HBV screening at least once during a lifetime for adults aged ≥18 years (new recommendation)
- During screening, test for hepatitis B surface antigen (HBsAg), antibody to HBsAg, and total antibody to HBcAg (total anti-HBc) (new recommendation)

Screening pregnant persons
- HBV screening for all pregnant persons during each pregnancy, preferably in the first trimester, regardless of vaccination status or history of testing*
- Pregnant persons with a history of appropriately timed triple panel screening and without subsequent risk for exposure to HBV (i.e., no new HBV exposures since triple panel screening) only need HBsAg screening

Risk-based testing
- Testing for all persons with a history of increased risk for HBV infection, regardless of age, if they might have been susceptible during the period of increased risk†
- Periodic testing for susceptible persons, regardless of age, with ongoing risk for exposures, while risk for exposures persists†

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MMWR March 10, 2023

Evaluation of Persons with CHB

- HIV, HBV DNA, anti-HDV, HBeAg
- Genotype if IFN considered; q HBsAg is new test
- Stage (liver enzymes and/or elastography or biopsy)
- Renal status
- US to r/o HCC
  - Cirrhosis: all
  - Asian: male 40; female 50
  - African: 25-30

Quantitative Surface Antigen

- Reflects both integrated and cccDNA
- Independent predictor of HCC and cure
- Eligibility for bepiroversin
- Not used for initial screening
- False pos caused by vaccination within 14d

Question #6

After HBV Testing, Which Requires Treatment?

	Age (yrs), clinical	DNA (IU/ml)	ALT (IU/ml)	HBsAg	HBeAg	Anti-HBs	Anti-HBc
A.	41, asymptomatic	5600	78	Pos	Neg	Neg	Pos
B.	51, asymptomatic	Neg	48	Neg	Neg	Neg	Pos
C.	21, born SEA	8,200,000	18	Pos	Pos	Neg	Pos
D.	62, RA on hydroxy chloroquine	Neg	34	Neg	Neg	Neg	Pos
E.	19, student	Neg	18	Neg	Neg	Pos	Neg

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A.	**41, asymptomatic***	**5600**	**78**	**Pos**	**Neg**	**Neg**	**Pos**
B.	51, asymptomatic	Neg	48	Neg	Neg	Neg	Pos
C.	21, born SEA	8,200,000	18	Pos	Pos	Neg	Pos
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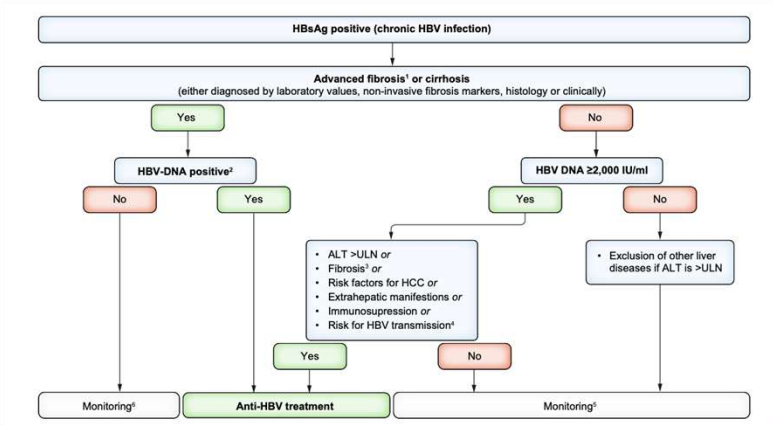

EASL J Hepatol 2025; AASLD 2025; WHO 2024

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HBV Treatment – Simple Version

- If HBV DNA detected and person wants treatment, use ETV, TAF, TDF, or pegIFN
  - HIV treat all
  - Cirrhosis treat all
  - Treatment is indefinite duration
  - Lower confidence of benefit if HBV DNA <2000 IU and/or nl ALT
  - Risk of reactivation when treatment stopped (low)

Treatment of HBV Changes with Renal Insufficiency

- **GFR 30-60 mL/min/1.73 m^2:** TAF 25 mg preferred
- **GFR <30-10:** TAF 25mg OR entecavir 0.5 mg q 3d
- **GFR <10 no dialysis:** entecavir 0.5 mg
- **Dialysis:** TDF 300mg/wk PD or entecavir 0.5mg/wk or TAF 25mg PD

HIV/HBV Coinfected Need Treatment for Both

- All are treated and tested for both
- HBV-active ART
- Entecavir less effective if LAM exposure
- **Watch switch from TAF- or TDF-containing regimen to CAB/RIL or DTG/RPV or XTC when HBsAg pos**
  - **HBV reactivation ~1% if just anti-HBc without HBsAg (Cenix and Opera cohorts, CROI 2026)**

Question #7

Case Study: Hepatitis serology in the oncology suite

- You are called about 62-year-old Vietnamese scientist who is in oncology suite where he is about to get R-CHOP for Non-Hodgkins lymphoma.
- Baseline labs: normal AST, ALT, and TBili. Total HAV detectable; anti-HBc pos; HBsAg neg; anti-HCV neg.

What do you recommend?

A. Hold rituximab
B. Hold prednisone
C. Entecavir 0.5 mg
D. HCV PCR

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C. Entecavir 0.5 mg*
D. HCV PCR

Rituximab, High-dose Prednisone, and BM Transplant High Risk for HBV Reactivation

- If HBsAg pos, prophylaxis *always* recommended
- If anti-HBc pos but HBsAg neg, prophylaxis still recommended with high-risk exposures (anti-CD20, high dose Pred, BM tx)
- Use TAF or ETV for 6-12 mo after dc immunosuppression (12 for anti-CD20)

AASLD Terrault Hepatology 2018

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Phase 3 Results of Bepirovirsen Treatment for Chronic Hepatitis B Virus Infection

Figure 2. Functional Cure at Week 72 and Key Secondary Outcome, According to Baseline HBsAg Level.

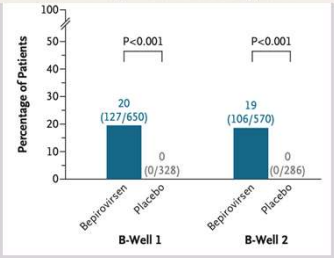
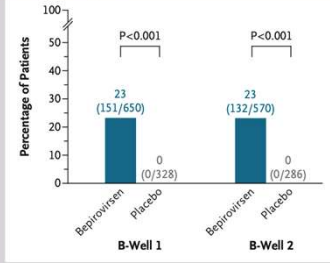


Figure 3. Discontinuation of NA and HBV DNA below LLOQ or Not Detected at Week 72, According to Baseline HBsAg Level.



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Hou NEJM 2026

A Phase 3, Randomized Trial of Bulevirtide in Chronic Hepatitis D

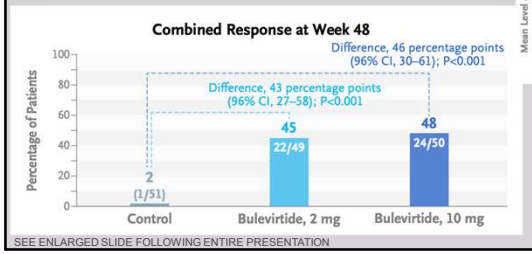
Wedemeyer H. et al. DOI: 10.1058/NJEMoa2213429

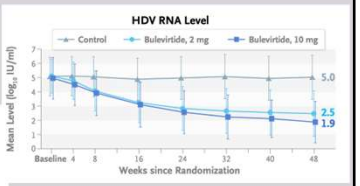
FDA NEWS RELEASE

FDA Approves First Treatment for Chronic Hepatitis Delta Virus (HDV) Infection

For Immediate Release: May 22, 2026

Today, the U.S. Food and Drug Administration approved Hepcludex (bulevirtide-gmod)





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Question #8

Case Study: Boaring chronic hepatitis in a transplant recipient

- 51 y/o HTN, and ankylosing spondylitis s/p renal transplant presents with elevated liver enzymes. Pred 20/d; MMF 1g bid; etanercept 25mg twice/wk; tacro 4mg bid. Hunts wild boar in Texas
- HBsAg neg, anti-HBs pos, anti-HBc neg; anti-HCV neg; HCV RNA neg; CMV IgG neg; EBV neg; VZV neg. ALT 132 IU/ml, AST 65 IU/ml; INR 1. ALT and AST remained elevated; HBV, HCV, HAV, CMV, EBV serologies remain neg.

Which test is most likely abnormal?

A. HEV PCR
B. HCV IgM
C. Tacrolimus level
D. Adenovirus PCR
E. Delta RNA PCR

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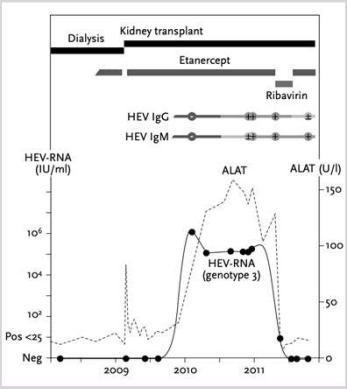
Which test is most likely abnormal?

A. **HEV PCR***
B. HCV IgM
C. Tacrolimus level
D. Adenovirus PCR
E. Delta RNA PCR

Chronic HEV in Transplant Recipient

- Europe (boar)
- Can cause cirrhosis
- Tacrolimus associated
- Ribavirin may be effective



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Barrague Medicine 2017

Chronic Hepatitis for the Boards Summary

- ★ HCV-associated conditions: PCT or cryoglobulinemia
- ★ HCV: HBV reactivation or drug interaction
- ★ HBV: reactivation post rituximab
- ★ HEV: chronic in transplant patient

Thanks and Good Luck on the Test!

Questions:

- Dave Thomas
  - dthomas@jhmi.edu