

HEPATITIS WEB STUDY

Acute Hepatitis C Virus Infection: Epidemiology, Clinical Features, and Diagnosis

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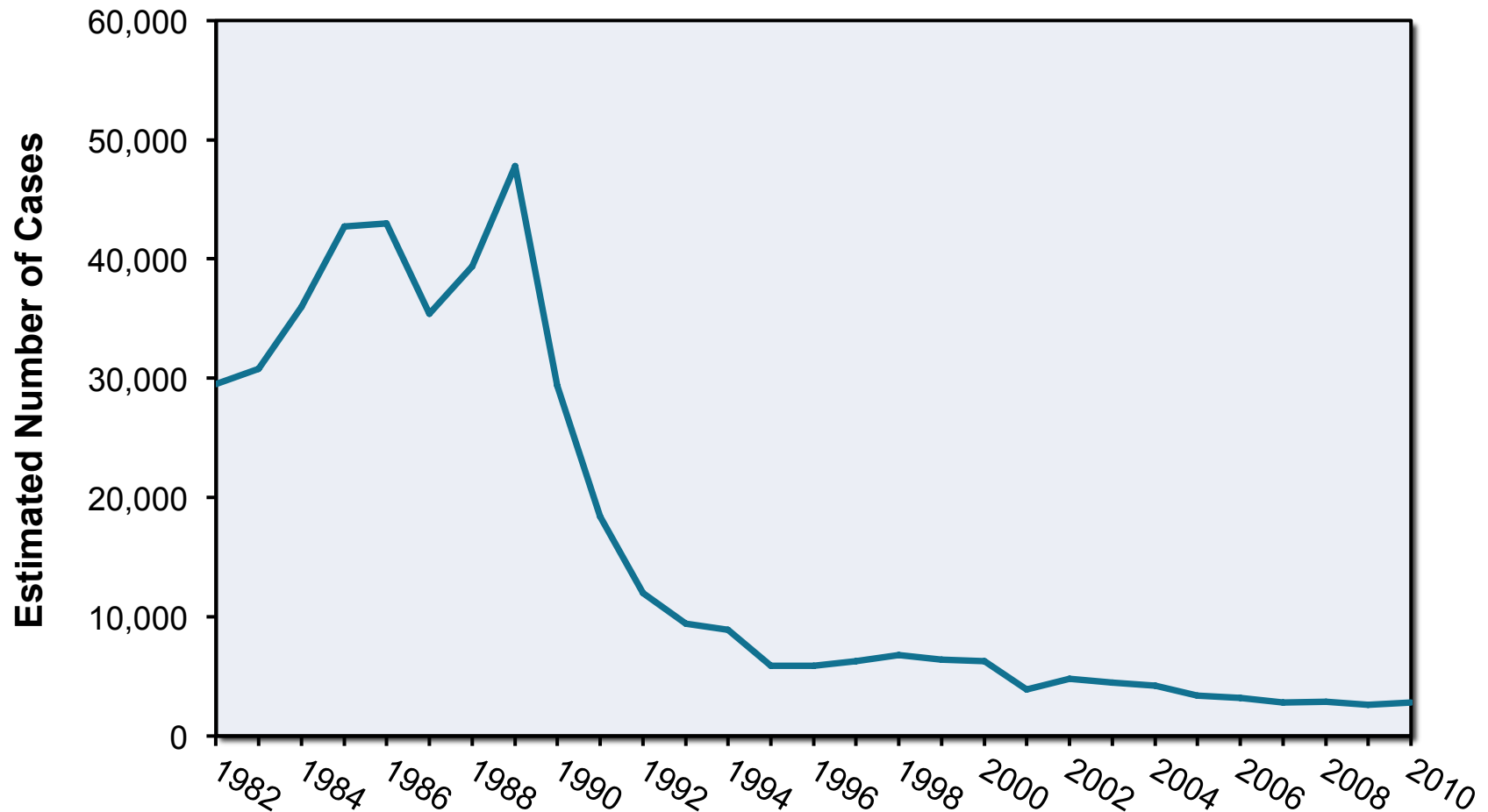
March 11, 2013

Disclosure Information

- No disclosures to report

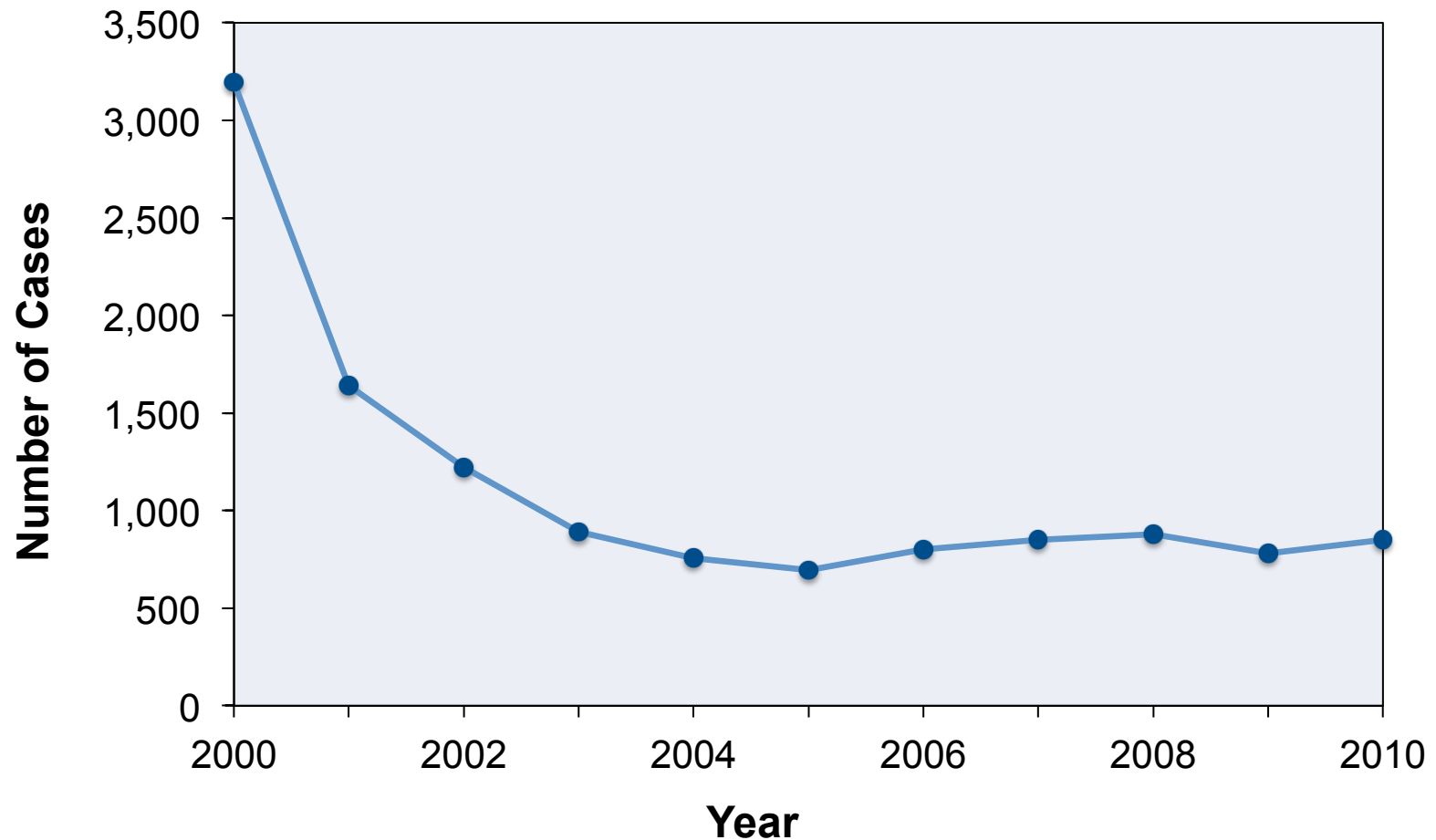
Acute Hepatitis C: Epidemiology

Incidence of Acute Hepatitis C, by year United States, 1982-2010



Source: CDC Division of Viral Hepatitis. Statistics and Surveillance.

Reported Number of Acute HCV Cases United States, 2000-2010



Source: National Notifiable Diseases Surveillance System (NNDSS)

Hepatitis C

Incident Cases in 2010

17,000 estimated new HCV
infections per year in U.S.



2,800 cases with
symptomatic acute HCV



853 cases of acute HCV
actually reported

Rationale for Identifying Patients with Acute HCV

- Provide risk reduction counseling and linkage to care
- Shift dynamics of natural history of HCV disease

Hepatitis C Transmission

- Bloodborne transmission is the most common route
- Sexual transmission in general population considered rare
 - Among cohort of 895 heterosexual HCV-serodiscordant couples, only 3 transmissions occurred → incidence 0.37/1000 person-years
 - Strain analysis did not support sexual transmission
- Increasing reports of HIV-infected men who have sex with men with sexually-acquired acute HCV infection in Europe, Australia, and U.S.

List of Potential Hepatitis C Exposures

Potential Source of Exposure to Hepatitis C Virus

Recent injection drug use

Needle stick injury

Procedures involving potentially reused needles: tattooing, body-piercing, acupuncture

Exposure to re-used sharp objects or re-used vials of injectable materials

Nosocomial exposure to contaminated equipment, or potential direct exposure to blood

High risk sexual practices: fisting, bleeding during sex, use of sharp objects during sex

Sexual contact with a known HCV-infected partner

Sexual contact with known HIV positive partner

Sexual contact with known sexually transmitted infections in patient or their partner

Blood transfusion or unsafe therapeutic procedures during travel in a developing country

Diagnosis

Diagnosis of Acute Hepatitis C

- Acute HCV = first 6 months of infection
- Diagnosis of acute HCV can be challenging:
 - Most cases asymptomatic
 - No reliable or specific IgM-based HCV antibody test

Acute Hepatitis C: 2012 CDC Case Definition

Acute Hepatitis C: 2012 Case Definition

Clinical Presentation

An acute illness consistent with acute viral hepatitis

AND

Jaundice/dark urine **or** ALT greater than 400 IU/L

Laboratory Criteria for Diagnosis

Meets 1 of the following 3 criteria:

- HCV EIA positive, **OR**
- HCV RIBA positive, **OR**
- HCV RNA positive

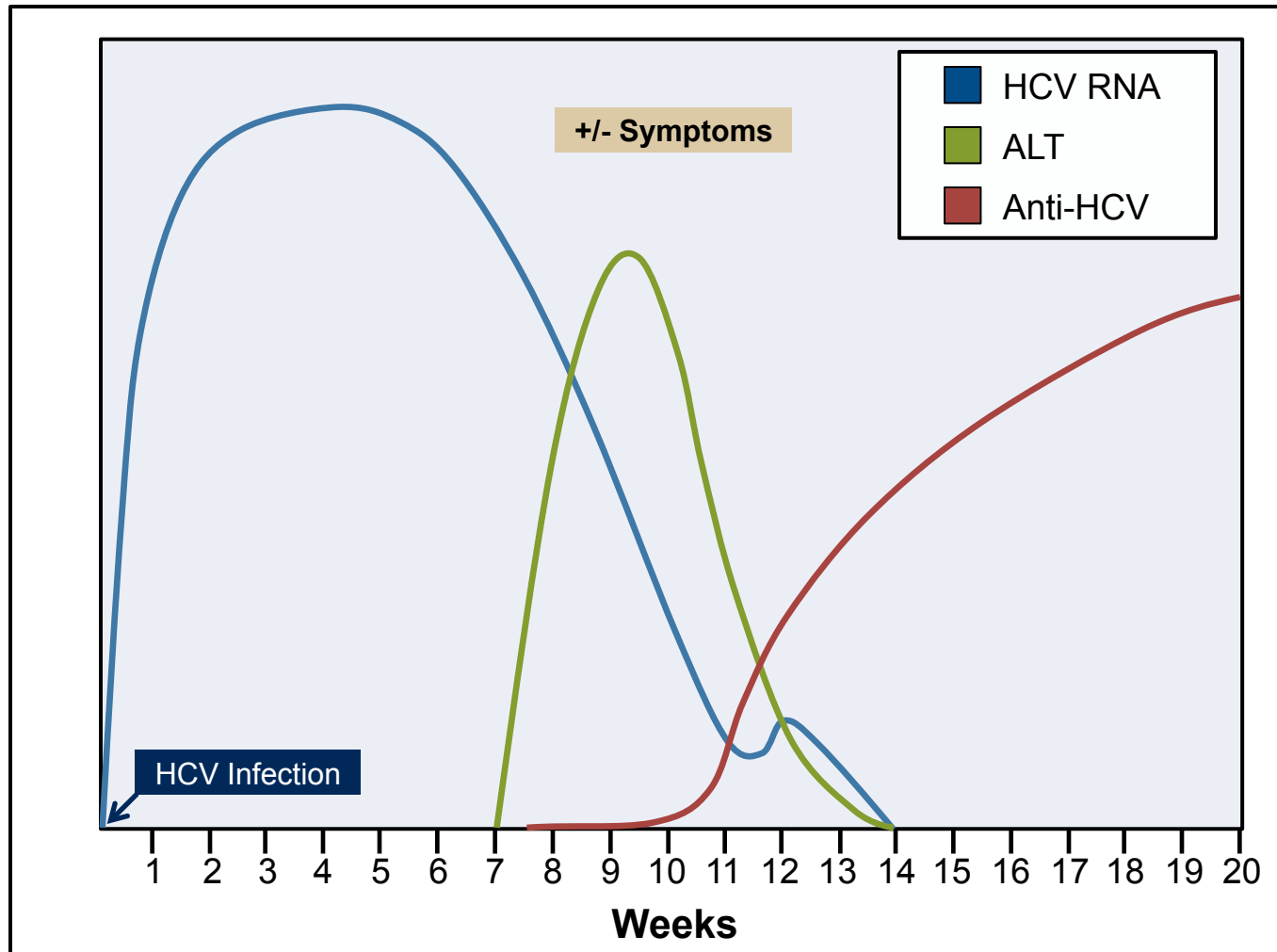
AND

- Negative HAV IgM **AND** negative HBV IgM anti-HBc

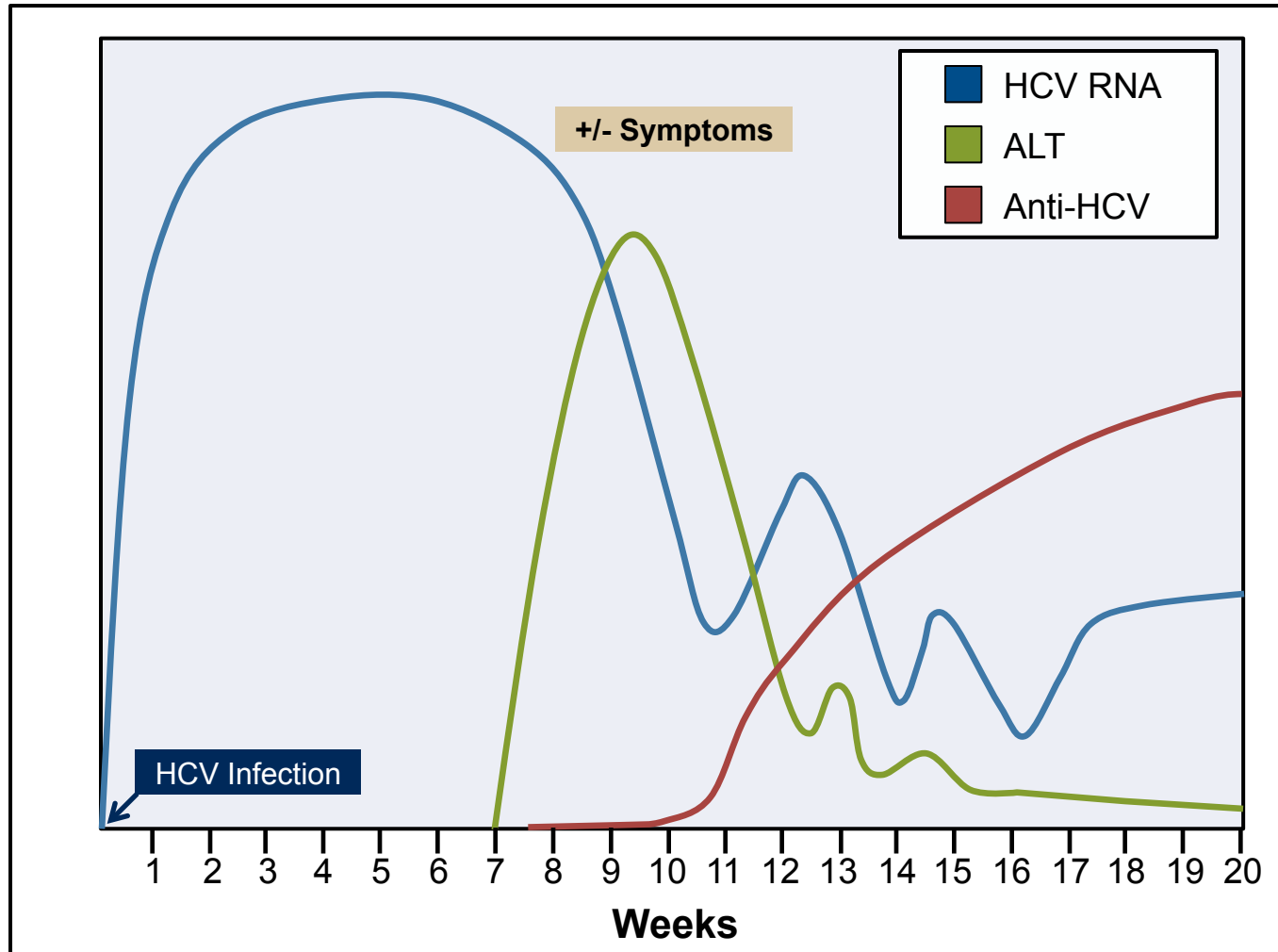
Diagnosis of Acute Hepatitis C

- **Hepatitis C RNA** – quantitative (or qualitative) assay
 - Can detect HCV RNA as early as 1 week from time of infection
 - Most sensitive early test
 - Levels can fluctuate widely in acute infection
 - Best to use assay with low limit of detection (<10-15 IU/mL)
- **Serum ALT**
 - Elevated in range of 400-800 U/L for symptomatic patients
 - Any new elevation (typically >7X ULN)
- **Hepatitis C antibody** (by standard EIA)
 - Lags behind HCV RNA
 - In most patients, detected x 2-4 months from time of infection
 - Not as sensitive: only 50-70% acutely infected are HCV Ab (+)
 - Helpful if seroconversion has occurred

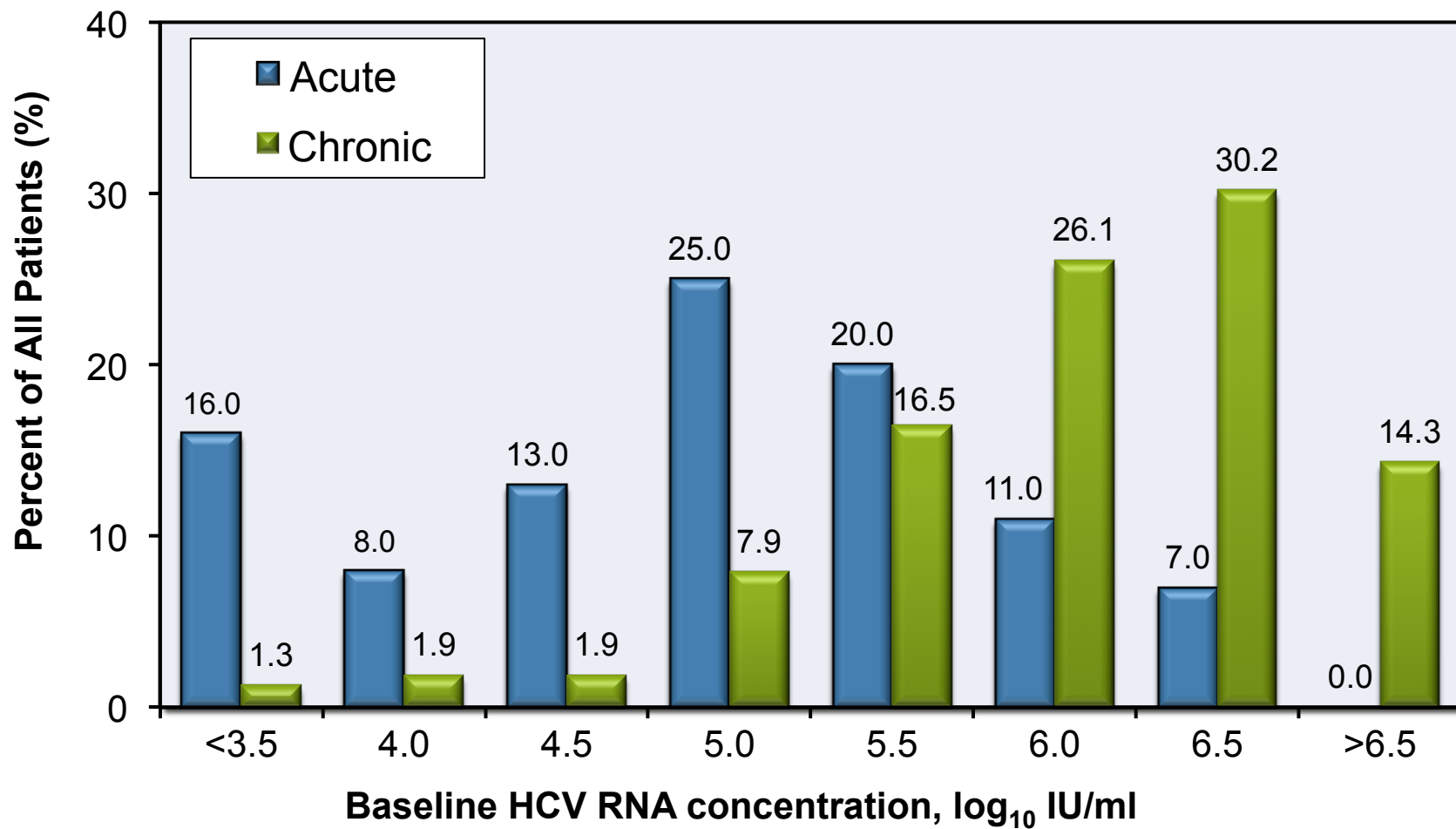
Spontaneous Clearance of HCV after Acute Infection



HCV Persistence after Acute Infection



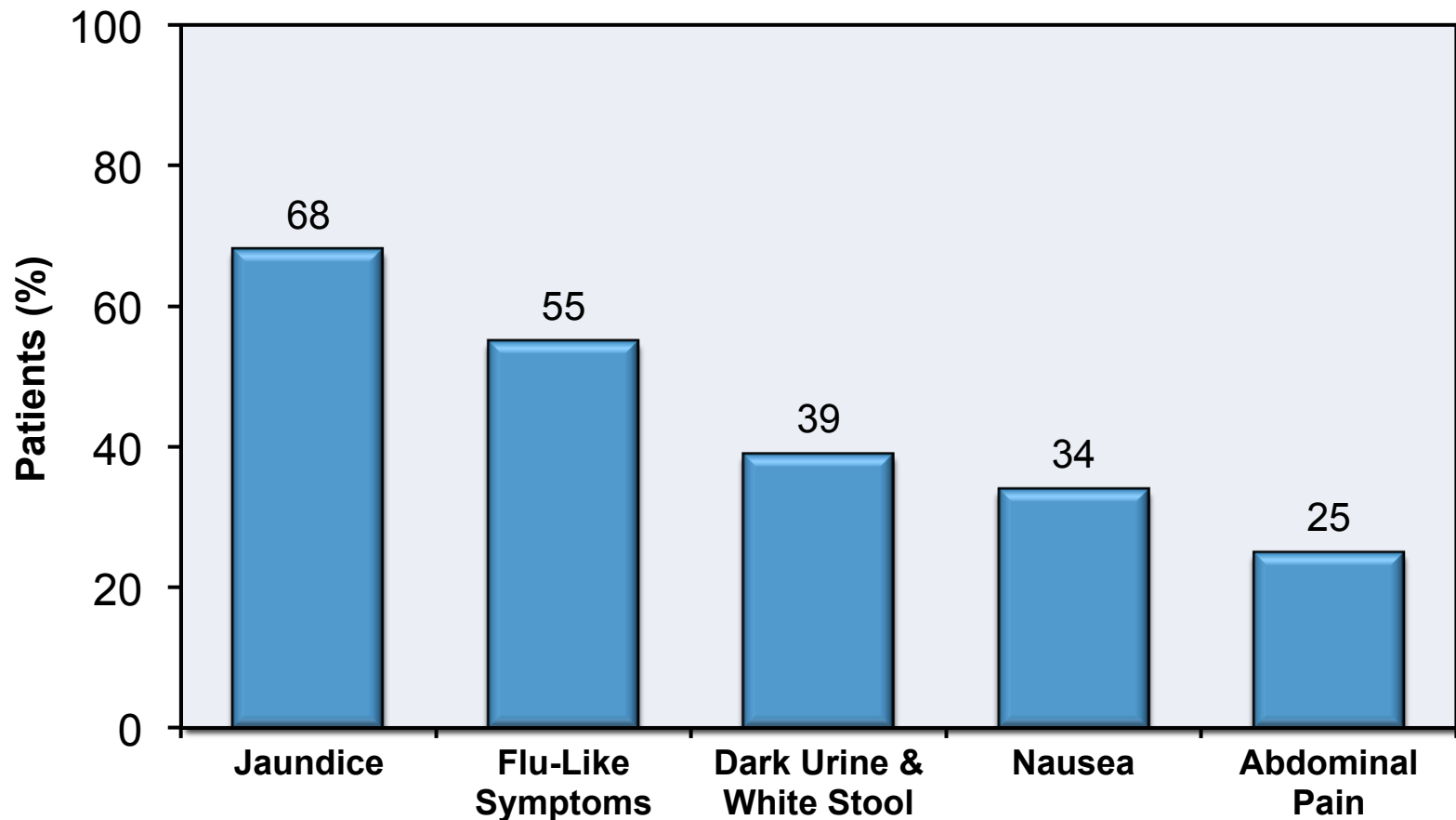
Distribution of HCV RNA Levels for Acute versus Chronic HCV



Clinical Features & Natural History

Acute Hepatitis C

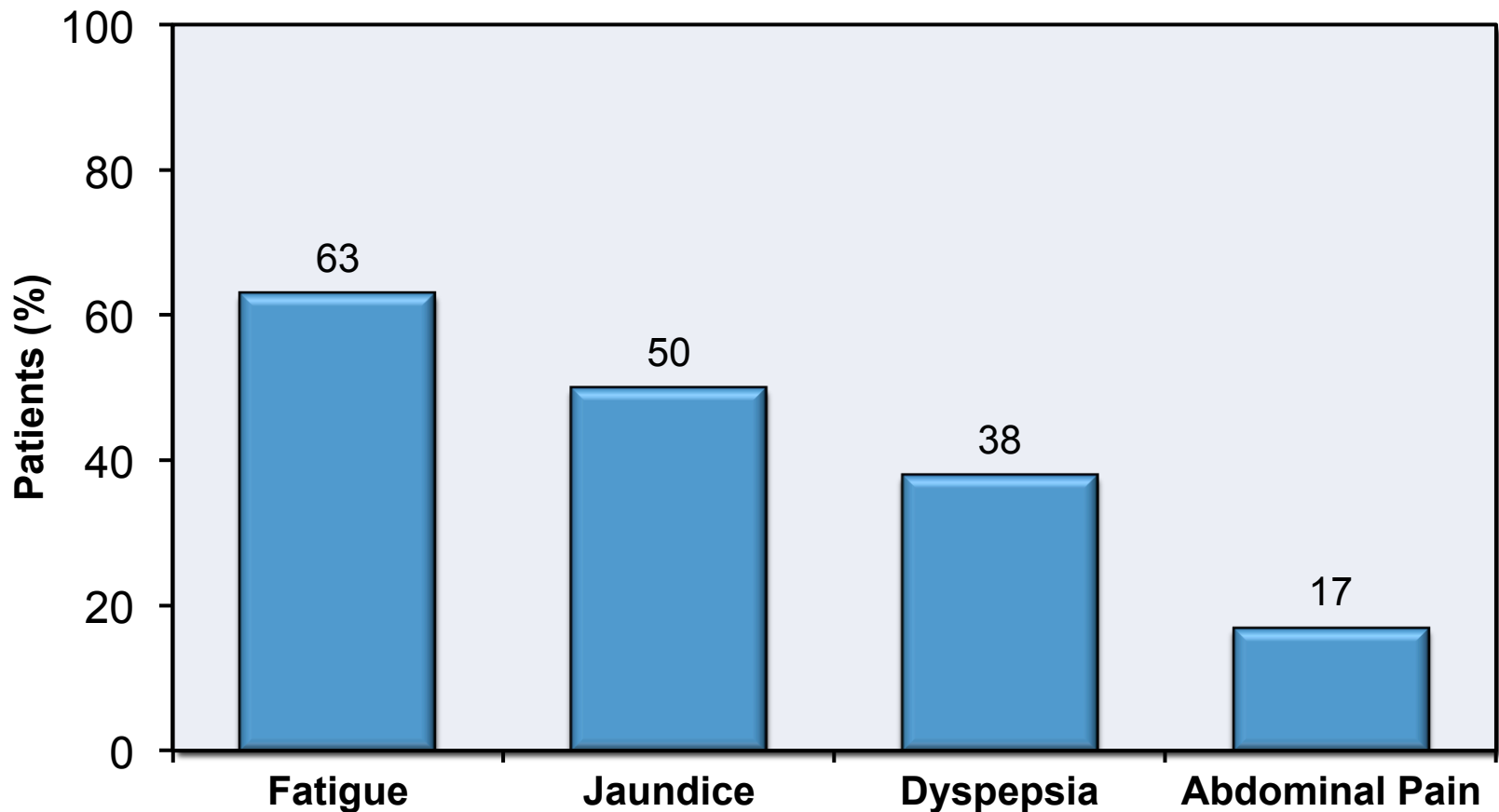
Clinical Features Among 51 Patients with Acute HCV Infection



Source: Gerlach JT, et al. *Gastroenterology*. 2003;125:80-8.

Acute Hepatitis C

Clinical Features Among 24 Patients with Acute HCV Infection



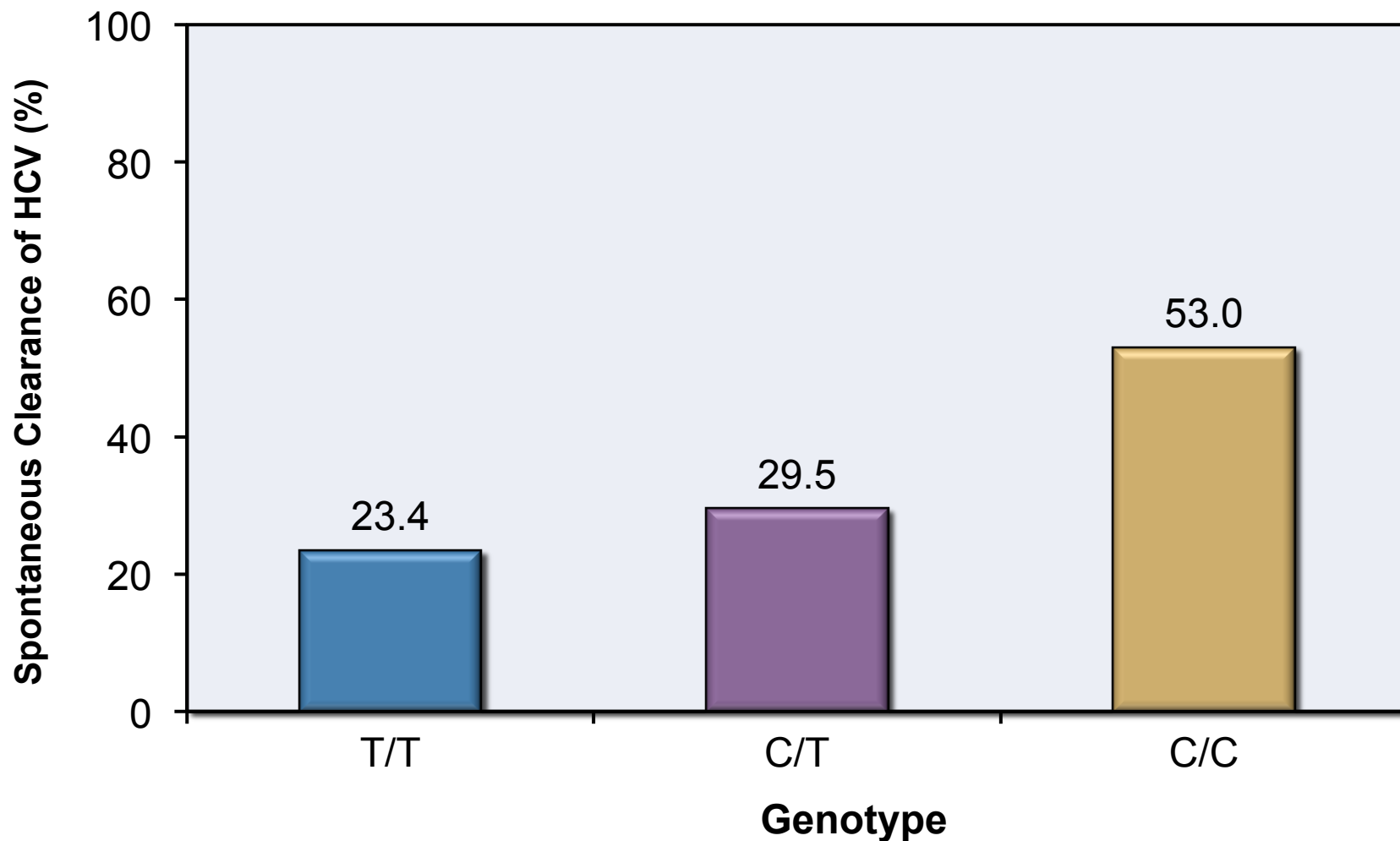
Natural History of Acute HCV Infection

- Incubation period = 4-14 weeks
 - Most with acute HCV are asymptomatic or minimally symptomatic
 - Only 10-20% have a distinct clinical illness
- If clinical illness occurs, hepatitis is rarely fulminant
 - ALT typically 400-1000 U/L
 - Bilirubin rarely >12 mg/dl
- Two possible outcomes:
 - Spontaneous clearance: estimated at 20-25% (may be lower in HIV-infected)
 - Persistent chronic HCV infection.

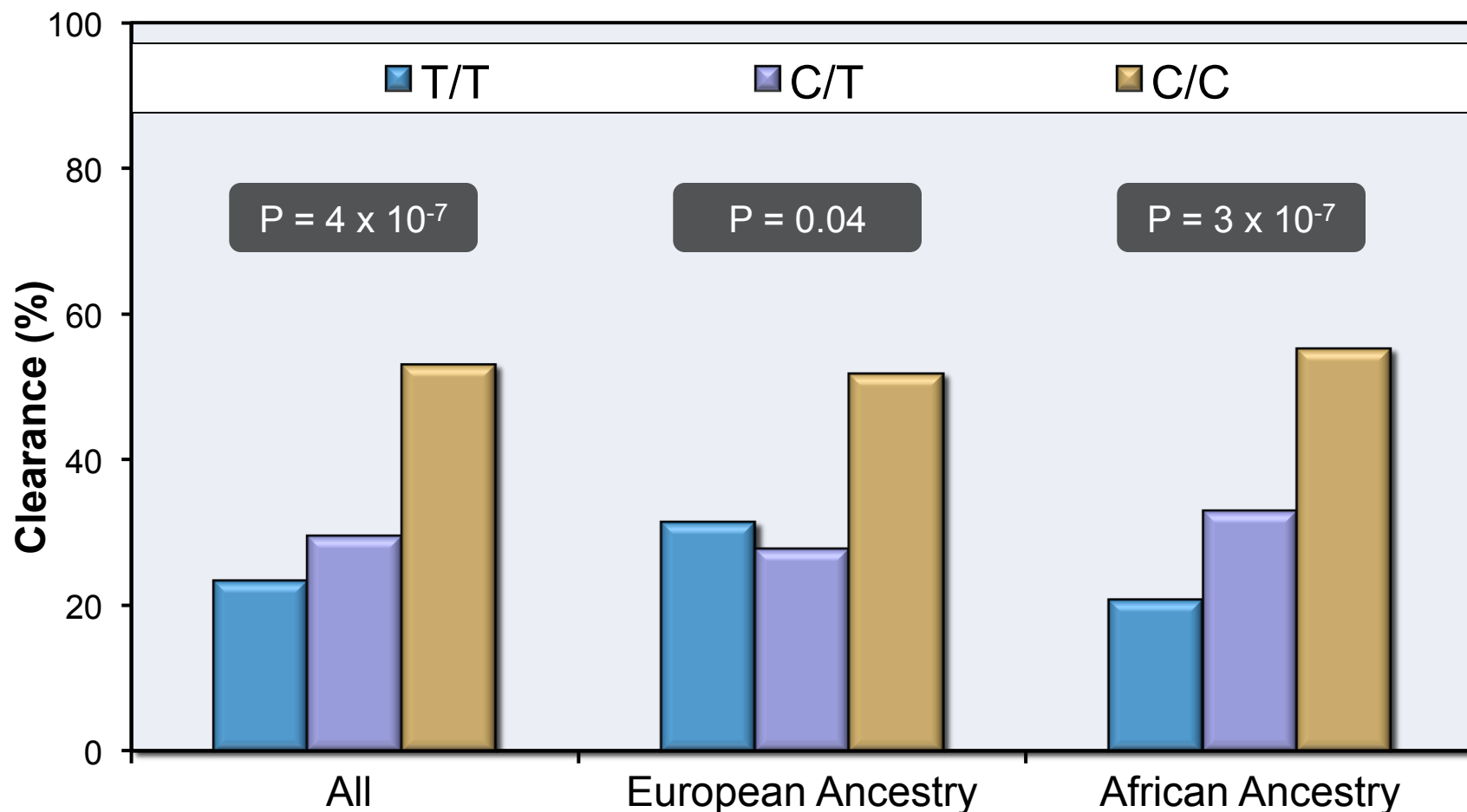
Predictors of Spontaneous HCV Clearance

- Lower peak HCV RNA levels
- Rapid early decline in HCV viral level
- High ALT
- Presence of jaundice
- Female gender
- Younger age
- Non-black race
- Coinfection with chronic hep B (+HBsAg)
- *IL28B* CC homozygous genotype

Genetic Variation in IL28-B and Spontaneous HCV Clearance



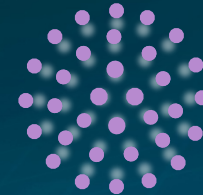
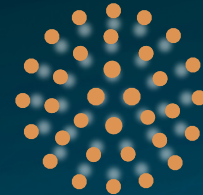
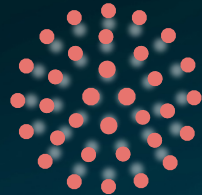
Genetic Variation in IL28-B and Spontaneous HCV Clearance



Acute Hepatitis C: Summary

- Often a missed diagnosis!
- Contaminated blood exposure is the most common but sexual transmission can occur
- Confirmation of acute hepatitis C can be challenging since minority (10-20%) of patients have clinical symptoms
- HCV RNA, serum ALT and HCV antibody testing remain the cornerstone of acute HCV diagnosis
- Spontaneous clearance can occur in some acutely infected patients but the majority (75%) will go onto chronic infection if untreated.

End



This presentation is brought to you by
Hepatitis Web Study & the Hepatitis C Online Course

Funded by a grant from the Centers for Disease Control and Prevention