# *POLYMERASE CHAIN REACTION (PCR) & infectious disease*

# Encephalitis

- HSV
- Entero virus
- Mumps
- Other viruses

# Acute Meningitis

- Pneumococ
- N. meningitis
- H. influenza
- Other bacteries

# Chronic meningitis

- **Tb**

# Cmv

- **Post transplant infection**

# Qualitative and quantitative assays for HCV RNA

- Qualitative assays can be used to test for HCV RNA
- HCV RNA can be detected in blood using amplification techniques such as PCR
- or transcription-mediated amplification (TMA).

- **The US Food and Drug Administration (FDA) has approved 2 PCR-based tests for qualitative HCV RNA detection**

- **Amplicor Hepatitis C Virus Test, version 2.0 (Roche Molecular Systems; Pleasanton, Calif) –**
- **PCR with a lower limit of detection of 50 IU/mL**

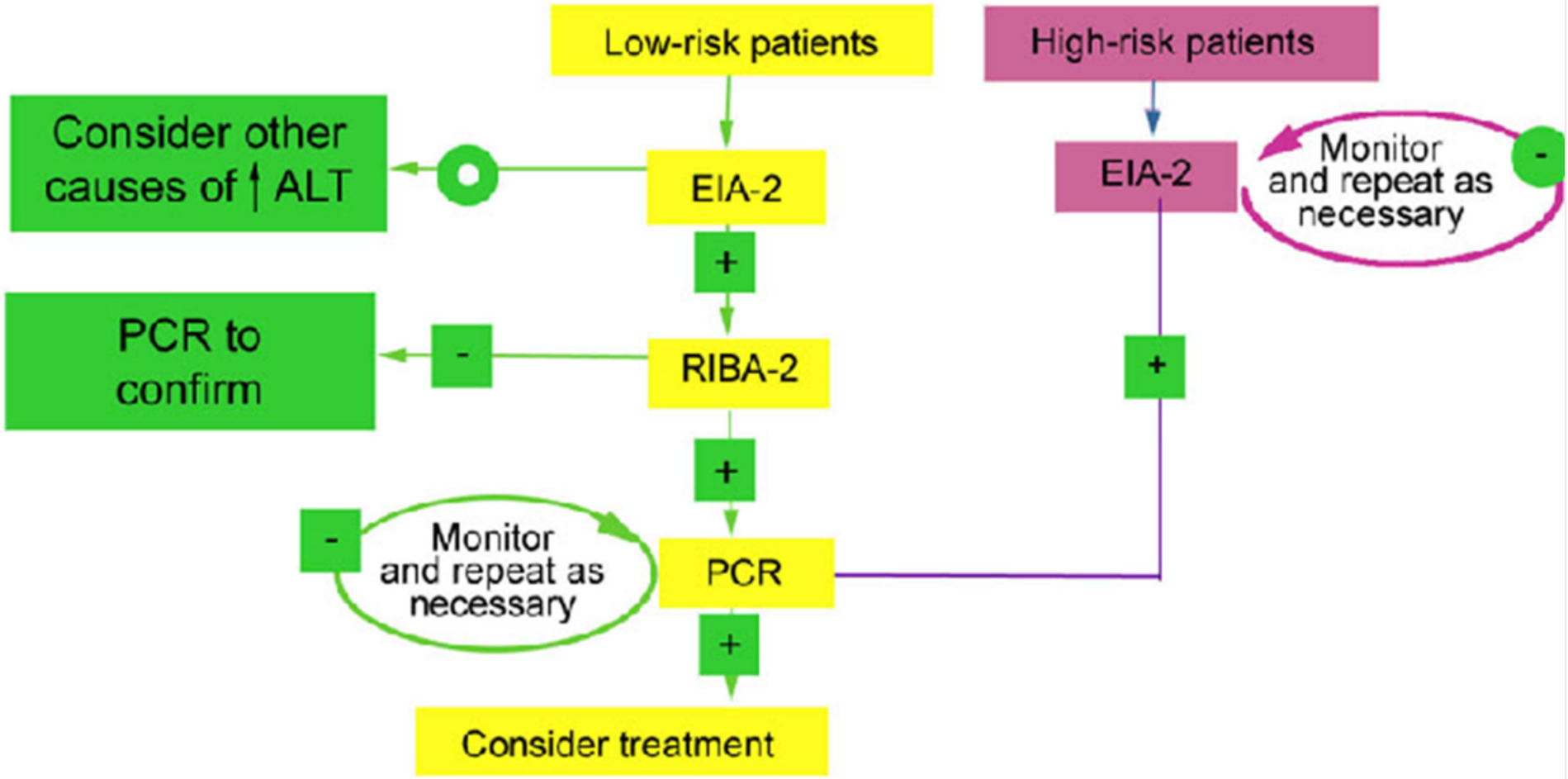
- **Cobas Amplicor Hepatitis C Virus Test, version 2.0 (Roche Molecular Systems; Branchburg, NJ) - PCR with a lower limit of detection of 50 IU/mL**

- **The HCV RNA level in blood helps predict the likelihood of a response to treatment,**
- **and the change in HCV RNA level can also be used to monitor response**

# *IL28B* gene variations

- **can be detected by PCR and are an independent predictor of SVR, regardless of genotype**

# Diagnostic Algorithm for HCV: Modified NIH Algorithm



# HCV genotyping

- **Genotyping is helpful for predicting the likelihood of response and duration of treatment**
- **Patients with genotypes 1 and 4 are generally treated for 12 months, whereas 6 months of treatment is sufficient for other genotypes**

- **Genotyping can be performed by**
- **direct sequence analysis,**
- **reverse hybridization to genotype-specific oligonucleotide probes,**
- **or restriction fragment length polymorphisms (RFLPs).**

# Goals of Therapy HBV

## HBeAg positive (wild type)

- HBeAg loss ± seroconversion
- Suppression of HBV DNA
- ALT normalization

## HBeAg negative (precore and core promoter mutants)

- HBeAg seroconversion not an endpoint
- Suppression of HBV DNA
- ALT normalization

# HIV

- **Viral loud  before treatment**