Viral Hepatitis: The Past and the Future

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MILESTONES IN THE IDENTIFICATION OF HEPATITIS VIRUSES

- 1950: Hepatitis B
- 1970: Hepatitis A
- 1980: Hepatitis D
- 1990: Hepatitis C
- 2000: Hepatitis E
Daphne
MILESTONES IN THE IDENTIFICATION OF HEPATITIS VIRUSES

- 1950: Hepatitis B
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MILESTONES IN THE IDENTIFICATION OF HEPATITIS VIRUSES

- **1950**: Hepatitis B
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MILESTONES IN HEPATITIS C IDENTIFICATION AND ADVANCES

1974
- Parenteral Transmission of NANB

1978
- Transmission of NANB to Chimpanzees

1982
- Surrogate Markers: ALT / anti-HBc

1986
- IFN Therapy: “NANB”

1990
- RCT IFN: “NANB”

1994
- Cloning of HCV
- Anti-HCV
- 1st Gen. c100-3

1998
- HCV Quasispecies
- HCV Genotypes

2002
- RCT IFN + Ribavirin

2004
- Replicon
- Pegylated IFN + Ribavirin

2006
- Peg IFN + Ribavirin + Telaprevir/Boceprevir

2010
- 2nd Generation DAAs

2014
- 2nd Generation DAAs
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- **1970**: Hepatitis D
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- **2000**:
**MILESTONES IN HEPATITIS D IDENTIFICATION AND ADVANCES**

- **1977**: Hepatitis D
  - "Delta Antigen"
- **1981**: Chimps Inoculated with HDV
- **1983**: HDV Viral Genome
- **1986**: Shifting Prevalence
- **2010**:
MILESTONES IN THE IDENTIFICATION OF HEPATITIS VIRUSES

- **1950**: Hepatitis B
- **1960**: Hepatitis A
- **1970**: Hepatitis D
- **1980**: Hepatitis C
- **1990**: Hepatitis E
- **2000**:
MILESTONES IN HEPATITIS E IDENTIFICATION AND ADVANCES

1980
Epidemic NANB

1984
Visualization of HEV in Swine

1988
Cloning of HEV

1992
cDNA Isolated in Stools

1996
Passive/Active Immunization in Monkeys

2000
Hepatitis E Vaccine

2004
Solid Organ Transplant

2008
Immunocompromised patients

2012
Chronic Hepatitis E

2012
Treatment Ribavirin
Conclusions

- Hepatitis A
  - Safe and effective vaccine

- Hepatitis B
  - Safe and effective oral therapy that achieves viral and clinical remission but indefinite duration
  - Safe and Effective Vaccine, universal vaccination
  - Malignant transformation

- Hepatitis C
  - Safe and effective oral therapy but residual cirrhosis predisposes to HCC

- Hepatitis D
  - Prevention with Hepatitis B vaccine
  - Primary therapy marginal

- Hepatitis E
  - Vaccines not readily available
  - Can evolve into chronic hepatitis
Challenges for Future

- Curing Hepatitis B
  - Eradicate cccDNA
- Preventing Hepatitis B malignant transformation
- Access to combination DAAs for Hepatitis C
- Salvage therapy for relapsing HCV
- Shorten duration of HCV Therapy
- Vaccine for HCV
- Effective treatment for Hepatitis D
- Readily available vaccine for Hepatitis E
- Linkage of Hepatitis E with other systemic disorders