Characteristics of hepatitis D infection in young adults

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Introduction

- The hepatitis D virus (HDV) is a defective satellite RNA virus that requires hepatitis B virus (HBV) for its replication and has the same sources and modes of spread as HBV.
- A coinfection with HBV and HDV usually eradicates both organisms and often results in complete recovery.
- Whereas a superinfection of HDV frequently progresses to chronic hepatitis D infection

Introduction

HDV has frequently been shown to suppress HBV replication. It is therefore suggested that the liver disease in HDV coexistence is mainly because of HDV.

Introduction

- Hepatitis D a serious and aggressive disease accelerating the progression to cirrhosis and is a significant cause of morbidity in many countries.
- Existing literature on the prevalence and characteristics of HDV infection in the young adult population is limited.
- This study aims to ascertain disease behavior and its effect on young adults.

Methods

The case records of 82 HDV RNA positive patients of age between 18-25 years were reviewed.

Presence of cirrhosis was clinically assessed by one of the following:

- Esophageal varices on endoscopy
- An episode of decompensation
- A biochemical–ultrasonographic diagnosis when at least two of the following features coexisted
  - Platelet count below 100 000/mL
  - AST/ALT ratio > 1
  - International normalized ratio (INR) > 1.5
  - Splenomegaly (spleen size >12 cm)

Methods

- The primary outcome was designated as an episode of hepatic decompensation, hepatocellular carcinoma, need for a liver transplant or liver-related death.
- The risk of decompensation was categorized with the help of baseline-event-anticipation (BEA) Classification.

Results

- Total number of patients – 82
- Male – 72 (87.8%)
- Median age - 22 years (18-25years)
- Cirrhosis at first presentation - 29(35.4%).
- Previously received PEG-IFN-based therapy - 26 (31.7%)

Results

Laboratory investigations	Median (range)	Percentage of patients with abnormal values
Hemoglobin	13.9g/dl (7.4-16.6)	<11.0; 8.8%
TLC	6 x10^9/L (2.4-15.4)	>11.5; 5%
Platelets	186 x 10^9/L (26-443)	<150; 32.1%
Bilirubin	0.7 mg/dl (0.2-17.2)	> 1.2; 11.7%
ALT	66 IU/L (25-723)	> 35; 92.4%
AST	54 IU/L (22-390)	>35; 88.1%
GGT	40 IU/L (10-942)	>55; 36.2%
Alkaline phosphatase	113 IU/L (51-395)	> 128; 38%
Albumin	4.1 g/dL (1.8-4.8)	<3.5 ;16.4%
INR	1.1 (0.8-2.5)	>1.2; 24.7%

Results

Laboratory investigations	Median (range)
HDV RNA level	5.75 x 10^5 IU/ml (2.30 x 10^2 -7.75 x $10^{8)}$
HBV-DNA	51/82 (62.2%)
HBeAg	17/82 (20.7%)

Cirrhosis

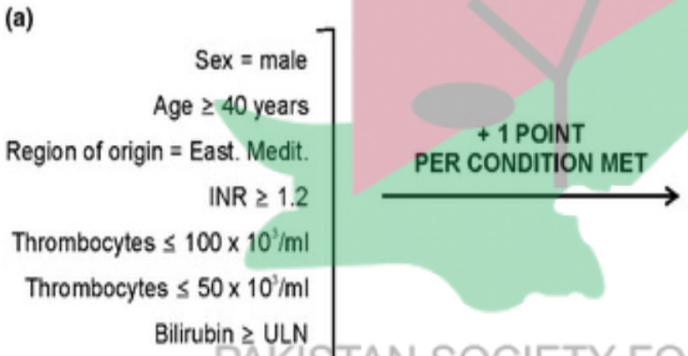
APRI >1	22/82 (26.8%).
Cirrhosis	29/82 (35.4%)
Child Class B+C	6/29 (21%)
MELD ≥ 15	13/82(15.9%)

Baseline-event-anticipation score

- Serrano et al developed a baseline-event-anticipation score (BEA score) based on variables associated with the development of liver-related clinical complications
- To identify subjects with a low, moderate or high risk for disease progression
- Useful for the management of hepatitis delta to decide which patients most urgently require antiviral therapy or need closer monitoring

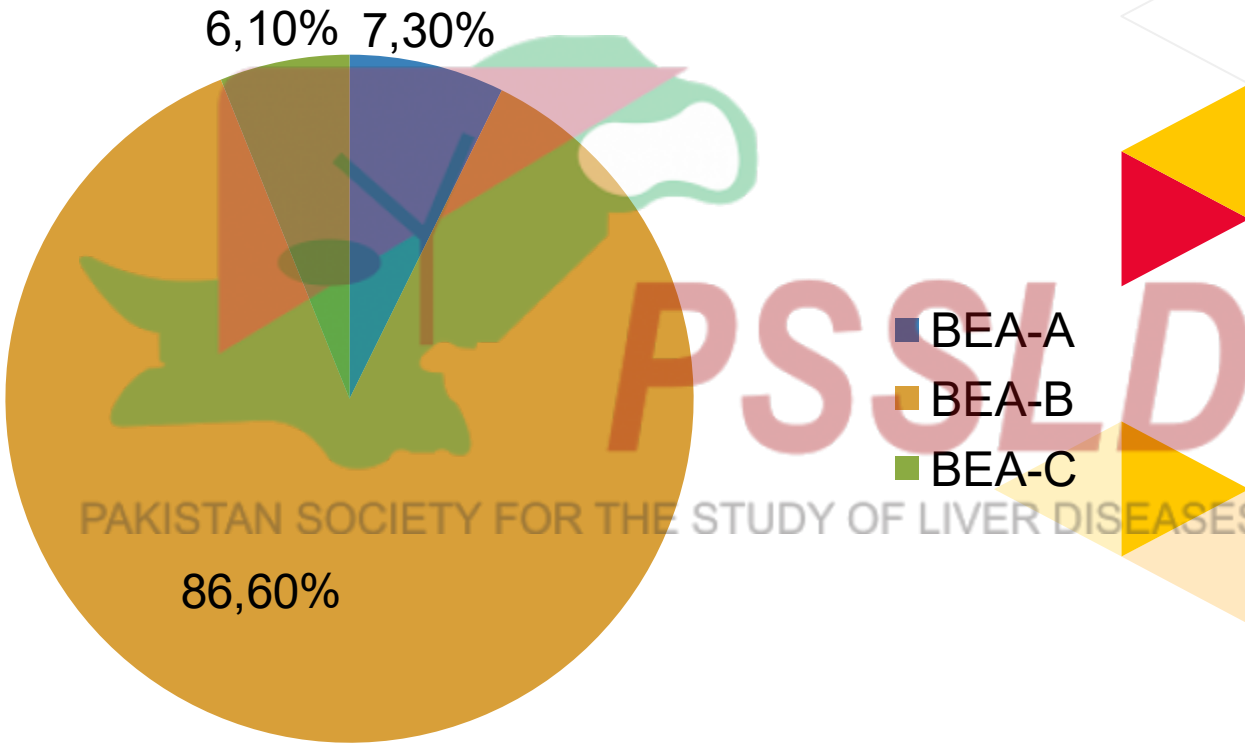
Serrano et al. J Viral Hepat. 2014 Nov; 21(11): e154–e163.

BASELINE-EVENT-ANTICIPATION (BEA) CLASS



Total points	BEA-score	Risk group
0	BEA-A	Mild risk
1		
2	BEA-B	Moderate risk
3		
4		
5	BEA-C	Severe risk
6		
7		

BASELINE-EVENT-ANTICIPATION (BEA) CLASS



Conclusion

- Most of the young adults were male.
- More than half of them had HBV DNA detectable but most of them were HBeAg negative.
- Nearly one-third of the patients were treatment-experienced.

Conclusion

- High values of AST and ALT indicated increased inflammatory activity.
- Patients were at a moderate to severe risk of clinical disease progression leading to an event (BEA score).
- A significant number of patients had already developed cirrhosis (35.4%) indicating the aggressive nature of disease in young adults.

THANK YOU