Etiological Profile and Precipitating Factors of Hepatorenal Syndrome in a Tertiary Care Hospital

Dr. Bhagyaraj Pulavarthi¹, Dr. Bayatapalli Divya², Dr. Gattu Esther Rani³, Dr. R. Ramesh.M.D⁴, Dr. Thulasi Ram.M.D⁵ Dr. V. Rushendrakumari. M.D⁶

¹,²,³(POST GRADUATE)
⁴(PROFESSOR)
⁵(ASSOS.PROF),⁶(ASST.PROF)
Srivenkateswaramedicalcollegetirupati

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I. Background

- Hepato-renal syndrome is a unique form of functional renal failure due to diminished renal blood flow which occurs in histologically normal kidneys seen in advanced liver disease.
- Prognosis is poor with survival commonly measured in weeks to months.
- Several treatment options exist, early diagnosis and treatment provide the best hope of survival.

OBJECTIVE

- To study the etiological profile and precipitating factors of hepatorenal syndrome.

II. Material & Methods

- STUDY DESIGN- Prospective study
- STUDY SUBJECTS-
  Patients with cirrhosis of liver admitted in ICU & medical wards of Sri Venkateswara Ram Narain Ruia Government General Hospital, Tirupati.
- Study Sample- 500 in patients studied prospectively.
- Study Period- June 2017 – June 2018.
- Written informed consent was obtained from all the participants.
- The local institutional ethical committee approved the study.

- Inclusion criteria-
  1. Patients with chronic liver disease and declining renal functions.
  2. Patients who meet HRS criteria.

- Exclusion criteria-
  1. Patients with Pre-renal failure
  2. Patients with renal parenchymal or obstructive pathology
  3. Patients using nephrotoxic drugs

- Statistical analysis-
  The study results are analysed using EPI INFO software version 7.1.4.0 for calculation of percentages.

- Baseline investigations-
  - Serum creatinine
  - Serum electrolytes
  - Liver function tests
  - Viral screening (HBV&HCV)
  - USG abdomen
  - CT abdomen
  - Hepatic and portal vein doppler
III. Results

- Percentage of patients who met IAC revised criteria of HRS type 1 were 73\%(n=66)
- HRS type 2 in 27\% patients(n=24)

**PERCENTAGEWISE OCCURRENCE OF HRS**
- Alcoholic aetiology found in majority of the patients i.e., 52 out of 90 patients.
- Viral aetiology found in 21 patients of which 15 were of hepatitis B and 6 were of hepatitis C.
- Combined aetiology of alcohol and hepatitis B in 6 patients and ALD with hepatitis C in 4 patients.
- Cryptogenic liver disease was found in 7 patients.

**PATTERNS OF AETIOLOGY OF HRS**
- In our study 58.8\%(n=52) of 90 patients presented with alcoholic aetiology.
- Viral aetiology was found in 23.3\%(n=21) of 90 patients among which HBV in 16.67\%(n=15), HCV in 6.67\%(n=6)
- Combined ALD+HBV coinfection in 6.67\%(n=6)
- Combined ALD+HCV coinfection in 4.44\%(n=4)
- Cryptogenic liver disease(n=7) detected in 8\% of 90 patients.

**PERCENTAGEWISE DISTRIBUTION OF ETIOLOGY IN HRS**

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PERCENTAGEWISE DISTRIBUTION OF ETIOLOGY IN HRS

ETIOLOGY OF HRS IN MALES AND FEMALES

- In males the most common aetiology found to be alcoholism in 50 patients.
- Combined ALD+HBV co-infection in 6 patients, ALD+HCV co-infection in 4 patients.
- Cryptogenic liver disease in 4 patients.

- In females, most common aetiology was of viral HBV infection i.e., 7 patients, followed by HCV infection in 3 patients and cryptogenic liver disease in 3 patients.
- Alcoholic aetiology found in only 2 patients.

PRECIPITATING FACTORS OF HRS

- 55.6% (n=50) patients with HRS had spontaneous bacterial peritonitis as the precipitating factor.
- Gastrointestinal hemorrhage in 33.3% (n=30) patients.
- Large volume paracentesis without volume expansion in 11% (n=10) patients.
IV. Conclusion

In our study alcoholic liver disease is the most common etiological factor and spontaneous bacterial peritonitis is the most common precipitating factor in HRS.

Reference

[1]. Sleisenger and Fordtranstrans gastrointestinal and liver diseases 10th edition

[2]. Sherlocks diseases of the liver and biliary system 12th edition

[3]. Harrisons 19th edition

[4]. Hepatorenal Syndrome: Aetiology, Diagnosis, and TreatmentG. Low, G.J.M. Alexander, and D.J. Lomas