Poster SAT-141

The Diagnosis of Hepatorenal Syndrome (HRS): How Much Does Use of the 2015 Revised Consensus Recommendations Affect Earlier Treatment and Serum Creatinine (SCr) at Treatment Start?

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1 INTRODUCTION

- Hepatorenal syndrome Type 1 (HRS-1) is a rapidly progressive, functional renal failure associated with high mortality, occurring in patients with cirrhosis and ascites
- Traditional diagnostic criteria for HRS-1 require a doubling of SCr level to >2.5 mg/dL in <2 weeks[1]
- In 2015, the International Club of Ascites (ICA) revised the diagnostic criteria for HRS-1 and renamed the condition as acute kidney injury–HRS (AKI-HRS)[2]
- AKI-HRS is diagnosed when SCr doubles in <2 weeks without any set SCr threshold, while keeping all other diagnostic criteria the same
- The ICA suggested that the application of this revised definition would facilitate earlier, more effective vasoconstrictor treatment

2 AIM

- To estimate the impact of using the revised ICA AKI-HRS diagnostic criteria on the timing of HRS treatment by applying these criteria to patients with HRS-1 enrolled in a large clinical trial (REVERSE, NCT01143246)[3]

3 METHODS

- Retrospective analysis of pre-enrollment serial SCr data from individual patients enrolled in REVERSE
  - The mean (SD) number of days between diagnosing AKI-HRS using the revised criteria and the traditional criteria was determined
  - SCr at AKI-HRS diagnosis (using the revised 2015 criteria) was compared to SCr at diagnosis of HRS-1 (using traditional diagnostic criteria) to estimate the effect of the revised criteria on SCr at the potential start of vasoconstrictor therapy

3 RESULTS

Patients

- 141 of 196 patients included in the REVERSE trial had data available for this analysis

Comparison of Criteria

- Mean (SD) number of days between meeting revised ICA AKI-HRS criteria and traditional HRS-1 criteria was **3.8 (3.3)** days
- Mean (SD) SCr level at diagnosis with the revised criteria was lower than that with the traditional criteria (**Figure 1**)
- Patient data were analyzed to evaluate change in SCr level (decrease or no change vs. increase) during the interval between meeting the revised ICA AKI-HRS criteria and traditional HRS-1 criteria:
  - 24/141 patients (17%) had a decrease or no change in SCr (mean decrease: 0.5 mg/dL) during a mean interval of 2.3 days
  - 117/141(83%) had an increase in SCr (mean increase: 1.7 mg/dL) during a mean interval of 4.0 days (**Table**)
- Most patients had a >0- to 2-mg/dL increase in SCr during the interval between meeting revised ICA AKI-HRS criteria and traditional HRS-1 diagnostic criteria (**Figure 2**)

Figure 1. SCr at Diagnosis of HRS Depending on Diagnostic Criteria (N=141)

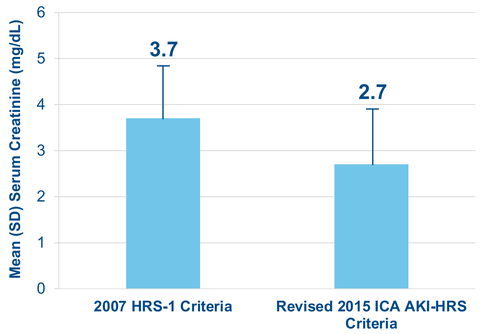

Figure 2. Change in SCr From 2015 ICA AKI-HRS Criteria to 2007 HRS-1 Criteria

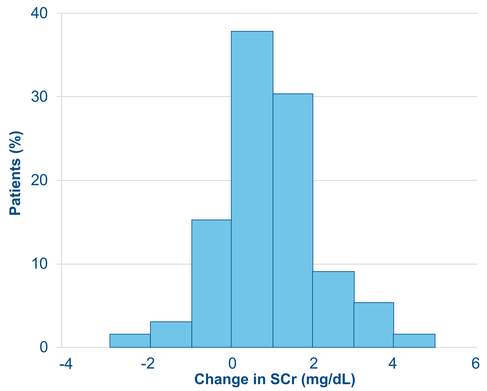

Table. Fold Increase in SCr, AKI-HRS to HRS-1 Criteria	% of Patients (n=117)
>1- to <1.5-fold	53%
1.5- to 2.0-fold	22%
>2.0-fold	25%

4 CONCLUSIONS

- Applying revised ICA AKI-HRS diagnostic criteria rather than traditional HRS-1 diagnostic criteria would be estimated to result in:
  - Earlier treatment by approximately **4 days**
  - SCr level at initiation of treatment would be on average approximately **1 mg/dL lower**
  - Almost half (47%) of patients would receive treatment before a further ≥1.5-fold increase in SCr
- Since SCr at baseline prior to therapy is a predictor of HRS reversal and improved survival,[4] using revised ICA AKI-HRS diagnostic criteria could lead to potentially better outcomes by facilitating earlier treatment

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6 REFERENCES

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7 DISCLOSURES

F.W.: Mallinckrodt Pharmaceuticals (consultant); Sequana (grant/research support).
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