TTS2024

Gachon University Gil Medical Center

Evaluating Post-Liver Transplantation Outcomes in Hepatorenal Syndrome Patients

: Insights from a Small Volume Center Study

Yeon Ho Park[1], Jaehun Yang[1], Doo-Ho Lee[1], Doojin Kim[1]

[1] Gachon University Gil Medical Center, Surgery, Incheon, Republic of Korea

Introduction

- Hepatorenal syndrome (HRS) poses significant challenges after liver transplantation (LT), with clinical outcomes showing considerable variability.
- This variability is especially pronounced in small volume centers, where resources and expertise may differ from larger institutions.
- Our study aims to evaluate the clinical outcomes of HRS patient post-LT at our center, with a specific focus on renal function recovery as indicated by creatinine levels.

Method

- **192 patients** who underwent LT at Gachon University Gil Medical Center
- From June 2005 to September 2022
- The cohort was divided into two groups:
  - 67 patients with HRS
  - 125 patients with non-HRS

Result

Table 1. Characteristics of recipient

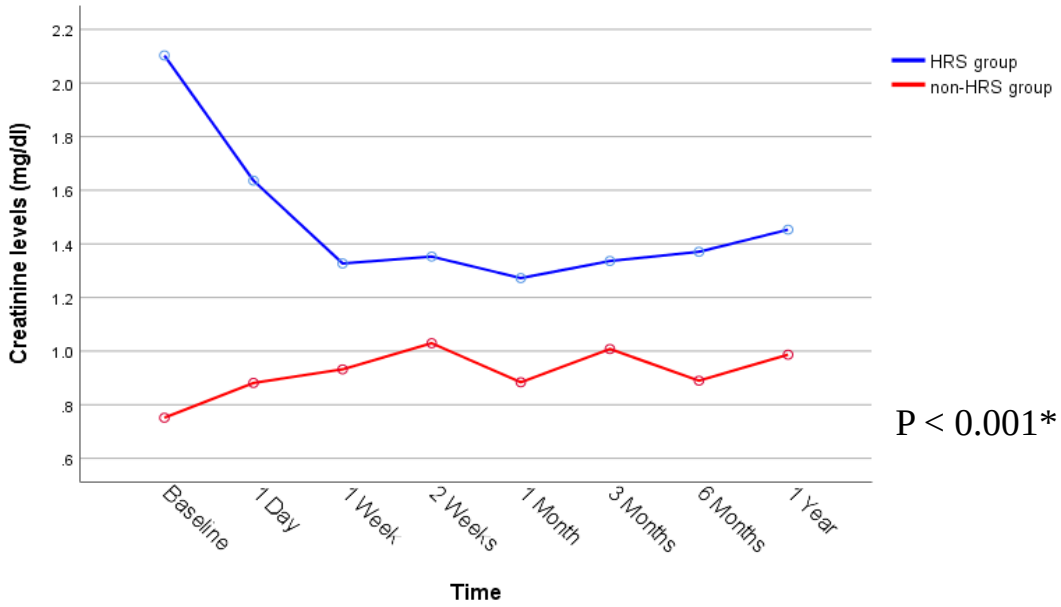
	HRS (n=67)	Non-HRS (n=125)	P value
Age (Years)	48.67 ± 9.47	49.90 ± 10.48	0.426
Height (cm)	167.42 ± 9.28	165.35 ± 8.02	0.110
Weight (kg)	67.19 ± 11.64	66.18 ± 13.23	0.601
BMI	23.90 ± 3.26	24.06 ± 3.79	0.760
Sex			
Male	43 (64.2%)	81 (64.8%)	0.932
Female	24 (35.8%)	44 (35.2%)	
ABO blood type			0.764
Group A	22 (32.8%)	45 (36.0%)	
Group B	18 (26.9%)	28 (22.4%)	
Group AB	13 (19.4%)	30 (24.0%)	
Group O	14 (20.9%)	22 (17.6%)	
Underlying disease			
Hypertension	9 (13.4%)	15 (12.0%)	0.775
Diabetes Mellitus	17 (25.4%)	27 (21.6%)	0.359
Other	3 (4.5%)	9 (7.2%)	0.458
Cause of Liver Transplant			0.007*
Alcoholic liver cirrhosis	23 (34.3%)	26 (20.8%)	
Hepatitis B virus	24 (35.8%)	41 (32.8%)	
Hepatitis C virus	0 (0%)	3 (2.4%)	
Toxic hepatitis	5 (7.5%)	1 (0.8%)	
Hepatocellular carcinoma	9 (13.4%)	43 (34.4%)	
Primary biliary cholangitis	2 (3.0%)	2 (1.6%)	
Metabolic dysfunction-associated steatohepatitis	1 (1.5%)	0 (0%)	
Other	3 (4.5%)	9 (7.2%)	
Pre LT dialysis	20 (29.9%)	0 (0%)	<0.001*
Post LT dialysis	40 (59.7%)	23 (18.4%)	<0.001*

Table 2. Characteristics of donor and graft

	HRS (n=67)	Non-HRS (n=125)	P value
Age (Years)	45.79 ± 17.35	35.73 ± 14.50	<0.001*
Height (cm)	167.05 ± 10.33	168.80 ± 8.38	.205
Weight (kg)	64.13 ± 11.64	65.59 ± 12.36	.426
BMI	22.90 ± 3.31	22.92 ± 3.42	.973
CIT (min)	329.97 ± 133.36	249.17 ± 130.45	<0.001*
Type of Donor			<0.001*
Living	8 (11.9%)	71 (56.8%)	
Deceased	59 (88.1%)	54 (43.2%)	

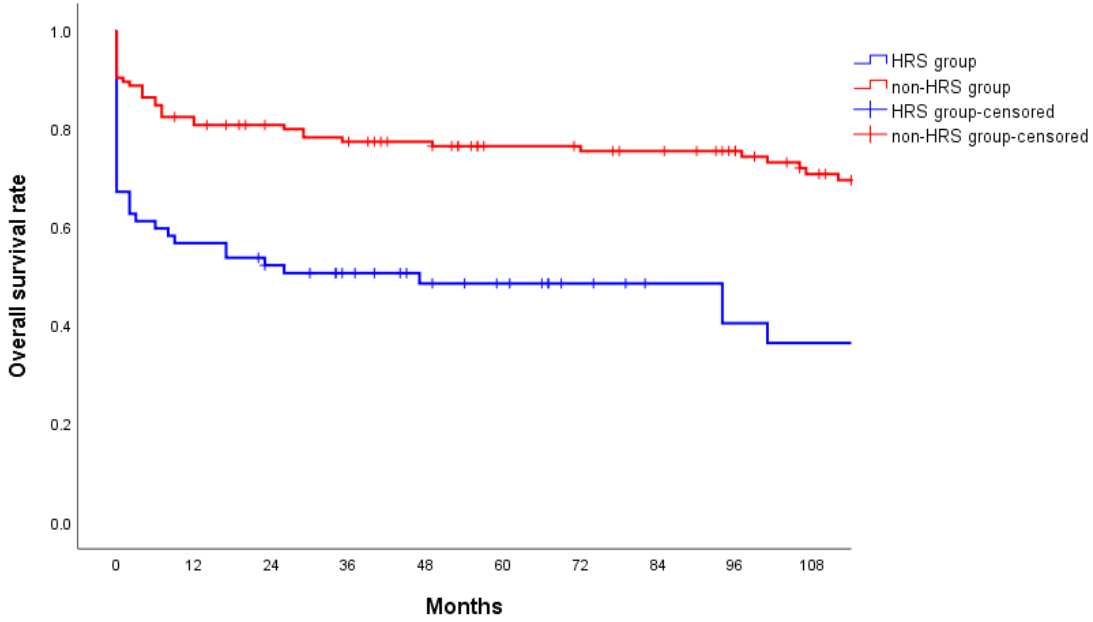
Result

Figure 1. Estimated Marginal Means of Creatinine Levels over Time by Group



P < 0.001*

Figure 2. Overall survival rate



	HRS group	non-HRS group	p-value
Overall survival rate (%)			<0.001*
1-year	56.7	80.8	
2-year	52.2	80.8	
3-year	50.6	77.4	
5-year	48.5	74.3	
7-year	48.5	67.9	
10-year	36.4	60.4	

Discussion

- Liver transplantation has shown to be a viable treatment for HRS patients in a small volume center, evidenced by the initial promising recovery in renal function.
- However, disparities in long-term renal function recovery become more pronounced after six months post-transplantation.
- Overall survival rate shows significant differences between groups, indicating the need for careful patient selection and tailored post-operative care.

Conclusion

- These findings emphasize **the importance of specialized care and continuous monitoring for HRS patients following liver transplantation**.
- Further research is necessary to refine treatment protocols and enhance overall patient outcomes in similar healthcare settings.