Steroid resistant rejection in liver transplantation: a single center study for risk factor and second line treatment

Tae Yun Lee

Division of Hepatobiliary, Department of Surgery, Incheon St. Mary's Hospital, The Catholic University of Korea, Incheon, Korea

Background: Steroid-resistant rejection (SRR) in liver transplantation occurs in about 10% of T cell-mediated rejection (TCMR), prognosis of SRR is known to be worse than steroid-sensitive rejection (SSR). Only a few studies describe treatment methods or features for SRR, and there is no clear consensus yet. Therefore, the purpose of this study is to describe the difference between SSR and SRR, and to compare the effect of the SRR treatment method performed our institution.

Methods: This study is a 10-year, retrospective cohort study at Seoul St Mary's Hospital, clinical data was collected from January 2008 to December 2017. Of total 663 cases, 154 patients (23.3%) underwent steroid pulse therapy for rejection, we excluded 30 patients who did not undergo liver biopsy. After all, 124 patients (18.7%) with biopsy proven rejection (BPR) were analyzed for this study.

Results: Child-Turcotte-Pugh (CTP) score (9.2 ± 3.0 vs. 10.4 ± 2.4 , $P=0.031$), cold ischemic time (125.9 ± 80.0 vs. 191.2 ± 124.9 , $P=0.041$), cytomegalovirus (CMV) infection (27.7% vs. 76.7%, $P<0.001$) showed a statistically significant difference in two groups. Multivariate analysis was performed on risk factors of SRR at first rejection. Then, CMV infection and total bilirubin at first rejection and numbers of rejection were significant results. Both overall survival and allograft survival rate of SSR patients is higher than SRR patients ($P<0.001$). Of 2nd line treatment patients, 13 patients (54.2%) were recovered and 11 patients (45.8%) were failed to recover. Survival was the highest in patients using anti-thymocyte globulin (ATG) and in patients with re-LT.

Conclusions: When the first rejection in LT occurs, patients with high bilirubin level and previous CMV infections are more likely to have SRR, so if they do not respond to steroid pulse therapy for the first time, either using ATG or re-LT preparation should be considered.

Corresponding author: Tae Yun Lee

E-mail: aroong318@gmail.com

© The Korean Society for Transplantation

This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0/>) which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.