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Validation of Novel Japanese 5-5-500 criteria in large indian LDLT cohort: A Retrospective Study

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Introduction: Liver transplantation is a curative treatment for selected patients with HCC. However, recurrence may still happen in 20 to 30% of the transplanted recipient. The widely accepted Milan criteria are restrictive and may deny many patients who would otherwise have a chance for a cure. Also, Milans criteria do not include AFP values. Thus, the quest for a more inclusive criteria continues. The novel Japanese criteria is unique as it includes size, number, and AFP value, all of which impact long-term survival. Therefore we aim to validate this criteria in our cohort.

Methods: We retrospectively enrolled 3677 patients who underwent living donor liver transplants (LDLT) at our center from 2006-2022. After excluding we had 600 patients who underwent LDLT for HCC. We categorized into 4 groups, Group 1 (Milan+, 5-5-500+, n=435), Group 2 (Milan-, 5-5-500+, n=62), Group 1 (Milan+, 5-5-500-, n=17) and Group 1 (Milan-, 5-5-500-, n=86) respectively. Clinico-demographic data, rates of recurrence of HCC, and long-term survival after surgery were obtained from clinical records. Baseline characteristics, overall survival, Recurrence-free survival, and risk factors for recurrence-free survival were analyzed.

Results: The rate of HCC recurrence was significantly higher in Group 4 compared to Groups 1,2 and 3 (12.7% Vs 6.6%, 6.4%, and 5.8%). The overall 5-year survival and recurrence-free survival were significantly better in group 2 compared to other groups (Log-rank; P=0.0004 and P=0.04) respectively. AFP>25, downstaging+, beyond Milan, and beyond 5-5-500 were significant independent risk factors for recurrence in the overall cohort. In addition GRWR<1 was significant risk factor for HCC recurrence in 5-5-500 cohort.

Conclusion: Thus, 5-5-500 criteria could increase the number of eligible LDLT candidates for transplant by 7.5% compared to Milan as in our cohort. This novel criteria may help us to expand HCC candidates with HCC who may have long-term better overall and recurrence-free survival.