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IS IT POSSIBLE TO PREDICT LIVER STEATOSIS IN LIVER TRANSPLANTATION USING LIVER TO SPLEEN ATTENUATION RATIO AND BMI?

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Introduction: Severe macrovesicular steatosis (MaS) in liver graft is widely considered as a contraindication for liver transplant. This study aimed to assess the value of liver to spleen (L/S) ratio measured on CT scan and donor body mass index (BMI) to predict severe MaS

Patient & Method: From January 2012 to August 2015, L/S ratio was measured in 213 brain death donors by local radiologists. Liver biopsy was systematically performed during procurement, allowing histological evaluation of steatosis. Severe MaS was defined as a percentage of steatosis > 60% validated by expert pathologists.

Results: Severe MaS was found in 6 (3%). L/S ratio was significantly associated with severe MaS (area under curve AUC: 0.80) L/S < 0.9 best predict severe MaS. The donor BMI was also associated with severe MaS (AUC: 0.79) with an optimal cutoff value 30 kg/m². The donor age and sex as well as liver function test were not associated with significant MaS. On multivariate analysis L/S ratio < 0.9 (RR: 15.4 [2.03-305.6] p=0.01) and BMI > 30 kg/m² (RR: 6.49 [1.13-50.4] p=0.03) remained independent predictors of severe MaS. The resulting probability of severe MaS was respectively 0%, 2%, 5%, and 24% in the absence of any factor, in the presence of BMI > 30 kg/m² only, in the presence of L/S ratio < 0.9 and in the presence of both predictors.

Conclusion: L/S < 0.9 and BMI > 30 kg/m² predict severe MaS. Liver biopsy before procurement should be considered in donors presenting both factors

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