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**Reperfusion injury to steatotic livers after transplantation can be attenuated with a modified HTK solution**

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Ischemia reperfusion injury (IRI) is still an obstacle especially in fatty livers. Most recently, a modified histidine-tryprophan-ketoglutarate (HTK) solution including N-acetyl-histidine, aspartate, glycine, alanine, and arginine has been developed. This study was designed to test its effect on IRI to fatty livers after transplantation.

Methods: Mild steatosis was induced by a single dose of ethanol (8 g/kgBW) to female Sprague-Dawley (SD) donor rats. Livers were harvested and cold stored at 4°C for 8 hours with either HTK or modified HTK solution before transplantation. Survival, serum transaminases (AST, ALT, LDH), standard histological staining (PAS) and immunohistochemical stainings (i.e. MPO, caspase-3 and iNOS) were analysed after 1h, 8h and 24h. For statistics, Kaplan-Meyer estimator, Analysis of Variance (ANOVA) and T-Test were used as appropriate. All results are presented as mean±SEM.

Results: Modified HTK solution significantly improved survival from 12.5% in controls to 87.5% ( $p<0.05$ ). Further, AST, ALT and LDH decreased to 2-75% of controls ( $p<0.05$ ) using the modified HTK. Necrosis index significantly decreased in the modified HTK group ( $p<0.05$ ). Staining scores for MPO, caspase-3 and iNOS were significantly higher in controls ( $p<0.05$ ).

Conclusions: This study shows for the first time superior protective effects of the modified HTK solution compared to standard HTK solution in fatty liver transplantation.