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"Comparison of Automated Needle Systems for Transjugular Liver Biopsy: A Prospective Randomized Controlled Trial"

Liver biopsy remains the gold standard for the evaluation of both acute and chronic liver pathologies. Percutaneous liver biopsy has been shown to be a safe and effective technique for obtaining hepatic tissue but is contraindicated in patients with disorders of coagulation, acute liver failure, ascites, or high adiposity. In patients with contraindications to percutaneous liver biopsy, transjugular liver biopsy (TJLB) represents a safe alternative. Additionally, the TJLB approach allows for hemodynamic measurement of the hepatic and portal venous systems providing additional insight to the presence and degree of portal hypertension.

Histopathology is imperative for the diagnosis of many conditions such as chronic hepatitis, drug-induced liver injury, and cirrhosis. For metabolic dysfunction-associated fatty liver disease (MAFLD) and metabolic dysfunction-associated steatohepatitis (MASH) histopathology provides valuable prognostic insight. Prognostic evaluation of these conditions is of growing importance as new treatments, including Rezdiffra, are now available for mild to moderate MASH. To appropriately guide treatment planning, biopsy samples that are of adequate diagnostic and prognostic quality are required.

In this study, we aim to compare the quality of biopsy samples collected from two FDA approved needle systems for TJLB. This study is an IRB approved prospective randomized control trial that is currently enrolling patients. All patients are taken through the informed consent process and patients are randomized using a random numbers table. The two needle systems being compared are the Quick-Core® (Cook Medical; Bloomington, IN) and Flexcore® (Argon Medical Devices; Plano, TX). Sample adequacy is determined by the number of attempts required to obtain four samples, the number of fragmented samples, the number of complete portal tracts per sample, and sample length. Data collection also includes liver function tests, Model for End-Stage Liver Disease (MELD) score, Child Pugh score, hepatic hemodynamic measurements, percent fibrosis, percent steatosis, and histologic diagnosis. Currently, 14 patients have been enrolled.