

# ARTERIAL NUTRIENT FLOW OF THE LIVER IN PATIENTS WITH LIVER CIRRHOSIS

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**Background.** The progressive evolutionary forms of liver cirrhosis are especially characterized by the damage to the hepatic arterial circuit. Although the blood flow through the hepatic artery is much lower than through the portal vein, the arterial blood provides the liver with more than 50% of the oxygen required. The hepatic artery constitutes the nutritional vasculature, representing a branch of the celiac trunk that brings blood enriched with O<sub>2</sub> to the liver. The quadrate lobe is vascularized by the middle branch of the hepatic artery, and the caudate lobe by the right and left branches of the hepatic artery. The arteriolar sphincters are positioned anterior to the passage of arterial blood in the sinusoids.

**Material and method.** A study was conducted, including 32 patients with liver cirrhosis – 22 men and 12 women, average age - 48±0,37 years. The calculated linear parameters in the hepatic artery by Doppler quantification.

**Result.** The arterial circuit in 65% of patients included the dilation of the diameter of the hepatic artery, which was associated with a decrease in diastolic velocity (38%) and an increase in the volume velocity of blood flow in the studied segment (57%). A linear increase in blood flow by approximately 70% was revealed. The volume of blood flow speed in the hepatic artery was 269±115 ml/min. As the pathology progressed, the flow volume also increased: from 785±0.5 ml/min to 979±138 ml/min.

**Conclusions.** 1. The change in blood flow in the hepatic artery represents an informative hemodynamic parameter, which subsequently invokes the process of severe liver damage. 2. In these patients, the reduction of the elasticity and tone of the large arteries, the decrease in the filling of the small and medium caliber arteries of the liver with the modification of the gradient of the arterial circuit during systole was highlighted.

**Keywords:** liver cirrhosis, hepatic artery, volume velocity, diastolic velocity.