Секция «Клеточная биология и гистология»

Morphological evaluation of myocardial biopsy as a predictor of postoperative outcomes in patients with ischemic cardiomyopathy

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Myocardium assessment plays a crucial role in predicting postoperative outcomes in patients with clinical criteria of ischemic cardiomyopathy (ICM): 3 month or more after myocardial infarction in anamnesis; $\geqslant$75% stenosis of left main or proximal left anterior descending artery or $\geqslant$75% stenosis of two or more epicardial vessels; ejection fraction (EF) $\leqslant$40% and end systolic index $\geqslant$60 ml/m^2 estimated by echocardiography [2]. The optimal method of ICM treatment is a surgical reconstruction of the heart [1, 3]. However, both the early and long-term postoperative periods may result in adverse outcomes, such as a return of heart hemodynamic parameters to preoperative values, and death in first 30 days after operation. According to previous studies, quantitative analysis of left ventricle (LV) biopsy is a potential method of predicting adverse postoperative outcomes in ICM patients [4]. It was also established that a morphological structure of LV myocardium differs depending on its localization. Herein, we hypothesized that LV biopsy could be insufficient for an accurate prognosis due to its deficient volume. We conducted a comprehensive morphological study to evaluate the validity of myocardial biopsy in terms of outcome prognosis. Biopsy and autopsy from both LV and right atrium (RA) were taken. Using different staining techniques (hematoxylin-eosin, Mallory) and quantitative assessment (morphometry) we compared biopsy and autopsy material from the same patients (n=29). Statistically significant difference was revealed in LV for CMC branching (p=0,018), diffuse (p=0,043) and pleximorphic (p=0,032) fibrosis, capillaries diameter (p=0,007); in RA for interstitial edema (p=0,03). Along with morphological patterns induced by ICM we revealed changes in myocardium structure of autopsy material that could be due to a post mortem alteration. We showed that myocardial biopsy of LV can be used as a morphological predictor, but the indication of LV functional condition is required.

Источники и литература

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