



with *Helicobacter pylori* (*H. pylori*), functional dyspepsia (FD). Proton pump inhibitors (PPIs) have become some of the most frequently prescribed medications for treatment of adults and children. CYP2C19 involved in the metabolism of PPIs. The effects of PPI depend on metabolic enzyme CYP2C19 with genetic differences in the activity of this enzyme. The frequency of the CYP2C19 polymorphism is highly varied among different ethnic populations.

The aim of this investigation was the development of pharmacogenetic test for evaluating the effectiveness of therapy by proton pump inhibitors

Methods: Using real time PCR and direct sequencing based methods, the current study assessed the frequencies of polymorphisms from genes encoding enzymes involved in drug metabolism (Proton pump inhibitors (PPIs)) in healthy individuals from different regions of Kazakhstan.

Results: We were evaluated the frequency of allelic variants of CYP2C19 in Kazakh population. Allele frequencies were derived for CYP2C19*2 (0.32%), CYP2C19*3 (0.08%), CYP2C19*17 (0.16%) and CYP2C19*4 (0.01%). All alleles were in Hardy – Weinberg equilibrium ($p > 0, 05$). Allelic variants of CYP2C19*8, CYP2C19*6 and CYP2C19*5 were not found in Kazakh population.

Conclusion: Thus, laboratory pharmacogenetic diagnostics of the following polymorphic markers, namely, CYP2C19*2, CYP2C19*3, CYP2C19*17 and CYP2C19*4 should be carried out to determine sensitivity to PPIs. Primers were designed for selected targets. At the moment we are optimizing protocols for genotyping.

FIRST EXPERIENCE OF USING BIOLOGICAL PROSTHESIS «UNILINE» FOR CORRECTION OF HEART VALVE DISEASES

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Objective: to conduct a clinical study of immediate results, assessment of hemodynamic characteristics of developed a new biological stented prosthesis «UniLine» (Russia, Kemerovo) designed for correction of heart valve lesions of various etiologies.

Materials and methods: between 08.2014 to 11.2014 the replacement of the native valve by xenopericardial stented prosthesis «UniLine» was performed in 16 patients. Depending on the implanted position, patients were divided into four groups: the first (I) group included 9 patients undergoing AVR; the second (II) group constituted 3 patients underwent MVR; correction of tricuspid regurgitation was performed for 2 patients of the third (III) group; the fourth (IV) group included 2 patients underwent a double valves correction, where both, MV and AV were replaced with the prosthesis. The group of the operated patients was dominated by men - 62.5%. The median age was – 60.8. The predominant part of the operated patients was in III functional class (FC) - 81.25% and 18.75% had FC IV (NYHA). AV stenosis prevailed in patients of the I group (88.8%), when correction of the valve combined with CABG in 3 operated patients. The regurgitation of the MV prevailed in the II group of patients (66.7%). The correction of relative deficiency of the TV was performed according to the Batista method, as well as the left atrial appendage ligation. CABG was performed for one patient. TVR on the background of IE was



performed for two patients of the III group. In the IV group replacements of the MK and AK for both patients were performed in the presence of valves regurgitation. The effectiveness of the implanted prostheses was evaluated using ECHO in each group depending on the size of prosthesis. The effective area of the hole and the pressure gradient on the prosthesis (maximum and average) was paid a special attention from all of the evaluated parameters.

Results: on hospital stage no lethal cases were observed. There were no early structural dysfunctions of the prostheses. Among non-fatal complication were: renal failure - 25%, cardiac and respiratory failure - 18.7%; hypoxic encephalopathy was observed in 12.5% of operated patients; the sharp disturbance of the cerebral blood circulation occurred in 1 operated patient (6.25%).

Conclusion: based on these results, it is possible to conclude that the biological prosthesis «UniLine» allows an adequate correction of various heart valve lesions, simultaneously having good immediate results, as well as hemodynamic characteristics allowing being fully operational in any position. In order to obtain the most complete information about this prosthesis model we will plan to study long-term results.

PAN-CANCER DECONVOLUTION OF TUMORAL TRANSCRIPTOMES REVEALS NEW MECHANISMS OF BLADDER CANCEROGENESIS

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Available large-scale data on molecular tumor profiling offers unprecedented opportunities in cancerology, to precise the diagnosis, make better prognosis and to suggest personalized treatment. Nowadays the bioinformatics community has access to several tens of thousands of tumoral transcriptomes, most of which are collected for the most prevailing cancers such as breast, colon, lung and ovarian cancers. We've analyzed 22 different datasets collecting transcriptomal profiles for various types of cancer, focusing at comparing bladder and breast cancer in more details, by deconvoluting each dataset into independent components. Some of these components appeared to be highly reproducible in most of solid cancer types, and some were cancer type-specific. By careful interpretation and integrating other data types, including histopathology images, we classified the independent components into those which are related to tumoral cells, to tumor microenvironment and those related to various technical factors such as influence of surgery type. We focused on studying the urothelial differentiation component, found in all bladder cancer data sets, which is specifically associated with bladder luminal tumors. We studied this component in more detail, both computationally and experimentally, which resulted in predicting a specific role of PPARG transcription factor in bladder tumorigenesis. We suggested that PPARG can play opposite role in basal-like and luminal molecular subtypes of bladder cancer: hence it can be a drug target in personalized treatment of bladder tumors.

ДНҚ-НЫҢ МЕТИЛДЕНУ ЖӘНЕ ГИДРОКСИМЕТИЛДЕНУ ПРОФИЛЬДЕРІН АДАМНЫҢ РАДИАЦИЯЛЫҚ САУЛЕЛЕНУІНІҢ БИОМАРКЕРІ РЕТІНДЕ ЗЕРТТЕУ