

**Aim:** analysis of frequency, clinico-pathologic characteristics, histopathological and immunohistochemical features and treatment results of SB GIST.

**Material and methods:** 39 patients with (*c-kit*(CD117(+)) GIST of duodenum, jejunum and ileum treated between 2007—2017.

**Results:** Mean age – 56.9±1.73 years, M:F=1:1.4. Main symptom – abdominal pain in 33 patients (84.6%), incidental finding – 9(23.1%). First presentation with a complication – 15 cases (38.5%): intraluminal hemorrhage – 7(46.7%), obstruction – 3(20%), perforation – 5(33.3%). Localization of tumors: duodenum in 6(15.4%) cases, jejunum – 18(46.1%), ileum – 15(38.5%). Solitary tumors in 34 patients (87.2%), multiple tumors – 5(12.8%) ( $p<0.0001$ ). GIST size  $\leq 5$ cm vs.  $>5$ cm – 8(20.5%) vs. 31(79.5%) ( $p<0.0001$ ). Mean number of mitosis for low risk group ( $\leq 5/50$  HPF) – 2.8±0.3, for high risk group ( $>5/50$  HPF) – 16.75±2.9. Segmental resection of the SB with anastomosis – in 29 cases (74.4%), cuneiform resection – 4(10.3%), excision of duodenal tumor – 2(5.1%), duodenal resection – 2(5.1%), duodenopancreatectomy – 2(5.1%). Metastases at first presentation were recorded in 6(15.4%) cases. Disease progression was recorded in 7(17.9%) patients. Complex treatment – surgical and target therapy with imatinib mesylate was applied to 19(48.7%) patients. Overall survival was 35.3±6.1 months.

**Conclusions:** GIST of SB are characterized by non-specific symptoms or are discovered incidentally, frequently are solitary and in the majority of cases are in the high risk group. Surgical treatment is the main curative option, but histopathological features of tumors justify the use of complex treatment (surgery + imatinib).

**Key words:** gastrointestinal stromal tumor, small bowel, surgical, imatinib mesilate.

## RECONSTRUCȚIA TRACTULUI DE EJEȚIE AL VENTRICULULUI DREPT CU HOMOGREFE VALVULARE PULMONARE DECELULARIZATE ÎN MALFORMAȚII CARDIACE CONGENITALE.



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**Introducere:** Matricea valvulară obținută prin metodele ingineriei tisulare crează posibilitate de regenerare a țesutului, un factor important în înlocuirea valvulară la copii.

**Scopul:** Studiarea eficacității detergenților în decelularizarea valvelor pulmonare umane și a rezultatelor clinice la pacienții care au suportat implantarea acestor valve.

**Material și metode:** Au fost prezervate 20 de homogrefe de la donatori cu timpul ischemiei calde cuprins între 2,5 și 8,5 ore. Pentru decelularizare au fost utilizați doi detergenți pentru 36 ore. În următoarele 96 ore homogrefele au suportat 8 cicluri de spălare în soluție Ringer cu antibiotice și antimicotice în condiții de vibrație continuă la temperatura de 37 °C. La un termen de 55,8±18,7 luni au fost investigați 32 pacienți la care au fost implantate homogrefele valvulare pulmonare (HVP) decelularizate.

**Rezultate:** În rezultatul preparării HVP cu utilizarea detergenților s-a obținut înlăturarea totală a celulelor de pe matricea valvulară. Semne de degenerare, îngroșarea cuspelor, reducerea mobilității lor, dilatarea sau stenozarea valvulară n-a fost depistată în dinamică. Gradientul transvalvular mediu a rămas stabil (4.35±2.54 la 4.66±2.63 mmHg), iar diametrul end-diastolic al ventriculului drept nu s-a schimbat în comparație cu suprafața corporală a pacienților.

**Concluzie:** Prelucrarea HVP cu detergenții SDS și ND a demonstrat înlăturarea totală a celulelor donor de pe homogrefă, cu păstrarea optimală a integrității matricei și membranei bazale. Corecția chirurgicală a malformațiilor cardiace congenitale utilizând HVP decelularizate au arătat un rezultat bun la pacienții pediatrici cu un potențial de a se remodela în paralel cu creșterea fiziologică a copilului.

**Cuvinte cheie:** homogrefe, ingineria tisulară, valva arterei pulmonare, matrice.

## RIGHT VENTRICULAR OUTFLOW TRACT RECONSTRUCTION WITH DECELLULARIZED HUMAN PULMONARY VALVES IN CONGENITAL HEART DISEASES.

**Introduction:** Non-immunogenic cell-free valvular scaffolds obtained by methods of tissue engineering have provided to induce in/vivo guided tissue regeneration and present a promising valve substitute especially for children.

**Aim:** To investigate the efficacy of detergent treatment in decellularization of HPV tissue and clinical results in patients with implanted cell-free valvular grafts.

**Material and methods:** Twenty PV allografts were harvested from nonbeating heart donors with warm ischemic time from 2,5 to 8,5 hours. Two detergents for 36 hours and eight washing cycles in Ringer solutions with antibiotics during 4 days were used to remove cellular remnants at 37°C temperature under continuous shaking conditions. 32 patients with cell-free valvular grafts were investigated mean follow-up 55,8±18,7 months.

**Results:** Treatment of PV with detergents resulted in complete loss of cusps, wall and myocardial cuff cellularity. No signs of pulmonary dilatation or stenosis, valve degeneration, cusps thickness, or reduction of cusp's mobility were observed during follow-up. Mean transvalvular gradient remained stable (4.35±2.54 to 4.66±2.63 mmHg). End-diastolic diameter of the right ventricle remained unchanged in contrast to physiological increase to BSA of the patients

**Conclusions:** Treatment of the HPV with ND and SDS solution demonstrated the efficiency in a complete removal of the cells from the human valve tissue with optimal preservation of the scaffold fibres and basal membrane. Surgical correction of congenital heart diseases using “fresh” decellularized PV homografts provides good early postoperative results and has the potential to remodel in parallel with the somatic growth of the child.

**Key words:** homograft, tissue engineering, pulmonary valve, scaffold