

POSSIBILITY OF THE USE MICROALBUMINURIA FOR AN ESTIMATION OF GLOMERULAR FILTRATION RATE AT CARDIOSURGICAL PATIENTS

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The aim of idea: to study interrelation between glomerular filtrated rate and microalbuminuria at cardiosurgical patients.

Methods. At 209 cardiosurgical patients undergoing cardiopulmonary bypass (CPB), in blood and urine defined levels of urea, creatinine, ions of sodium and potassium with calculation of glomerular filtrated rate (GFR, ml/minutes) by Cockroft-Gault, transtubular potassium gradient (TTPG, %), fractional excretions of urea (FEUr, %) and sodium (FENa, %), in addition in urine investigated microalbuminuria (MAU, mg/minutes) in before operation and early the postoperative period. Renal dysfunction (RD) considered as decrease GFR on 33% and more by preoperative value.

Results. Depending on preoperation GFR was has been allocated 4 groups of patients: group 1 (n=30) – GFR less than 60 ml/minutes, group 2 (n=38) – GFR 60-80 ml/minutes, group 3 (n=87) – GFR 80-120 ml/minutes, group 4 (n=54) – GFR over 120 ml/minutes. The tendency on reduction of patient age in groups 1-4 was revealed. In groups 1 and 2 parity of the man and the woman makes 1,5-1,7:1, and in groups 3 and 4 – 6,9-4,4:1. Initial hyperfiltration was associated with tubulopathya signs – increase value TTPG, decrease FEUr, FENa, and initial hypofiltration – with decrease in renal water secretory function. For 1 postoperative day it is revealed that the maximum quantity of patients with RD was in group 1 – 50%, and minimum – in group 2 – 3,4%. In groups 2 and 4 percent patients with RD was 21,1 and 22,2% respectively. For 3 postoperative days in all groups the number of patients with RD was approximately identical. At after coronary arteries bypass grafting, following equations of regress for decrease $GFR = -31,4x + 171,2$, $r^2 = 0,9555$ and $MAU = 3,07x + 20,3$, $r^2 = 0,8583$ have been received. At patients with valves replacement of the equation of regress are presented as $GFR = -28,21x + 159,0$, $r^2 = 0,9775$ and $MAU = 4,72x + 36,0$, $r^2 = 0,983$. At after surgical aortic aneurysms correction of the equation of regress represent $GFR = -33,08x + 175,35$, $r^2 = 0,9546$ and $MAU = 10,567x^3 - 74,2x^2 + 151,63x - 40,8$, $r^2 = 0,956$.

Conclusion. Women after 55 years have a sharp and progressing decrease in renal function. Initial hyperfiltration associates with tubular dysfunction, and a hypofiltration – with decrease in renal water secretory function. Increase MAU at 1 mg/minutes in the early postoperative period testifies to decrease GFR on 4,5 ml/minutes after coronary arteries bypass grafting, on 3,8 ml/minutes – after valves replacement and on 5,4 ml/minutes – after surgical treatment of aortic aneurysms. It can be used for an estimation renal functions on MAU level at cardiosurgical patients.