THE NEPHROPROTECTION UNDER CORONARY ARTERIES BYPASS GRAFTING

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Objective: To determine the type of coronary arteries bypass grafting for maximum renal function preservation.

Methods: The study involved 173 patients who underwent coronary bypass surgery (CABG). By type of comorbidities, patients were divided into group 1 – with diabetes mellitus (DM), a group 2 – arterial hypertension stage 2 (AH-2) and a group 3 – arterial hypertension stage 3 (AH-3). Before surgery, the 1, 2 and 3 days after surgery the frequency of glomerular (GD) and tubular (TD) dysfunction was evaluated.

Results. Patients in group 1 and 3 performed on-pump CABG surgery 68 and 62%, respectively. In group 2, dominated the operation off-pump CABG (41%) and in the off-pump on beating heart CABG (OPBH) –35%. At day 1 TD was present in 55, 58 and 64%, GD – in 32, 19 and 38% of patients for groups 1-3, respectively. In group 1, after OPBH DG did not develop, whereas after on-pump CABG it was recorded in 19.2, 7.6 and 14%, off-pump CABG – in 12.8, 11.4 and 14% of patients. At day 1 TD after on-pump CABG was noted in 35%, 2 days – 26%, 3 days – in 29% of cases, after OPBH – at 7, 11 and 0%, off-pump CABG – 13, 7 and 14%, respectively for 1, 2 and 3 postoperative days. In group 2, the incidence of GD post-OPBH for 1 day was 5.5%, on day 2 and 3 – 0%, after off-pump CABG – 5.5 and 11.5%, respectively, on day 1 and 2, the day 3 – 0%, when on-pump CABG – 8, 11.5 and 16%, respectively, for days 1-3. Frequency of TD after on-pump CABG was detected in 7, 12 and 40%, of OPBH – 24, 19 and 40%, off-pump CABG – 27, 35 and 0%, respectively for 1-3 days. In group 3, the incidence of post-operative HD after on-pump CABG at 19, 21 and 35%, after a off-pump CABG – 5, 6.6 and 10%, after a OPBH – 5, 5.4 and 5%, respectively, for days 1-3. TD observed after on-pump CABG at 41, 34 and 40% of patients, off-pump CABG – 14, 10 and 10%, of OPBH – 9, 7 and 5% of patients at 1–3 days, respectively.

Conclusion. To maximize the preservation of renal function after coronary artery bypass grafting in patients with diabetes mellitus and arterial hypertension stage 3 rather complicated surgery with cardiopulmonary bypass without aortic clamping. Was used with arterial hypertension stage 2 renal function is better preserved after surgery without cardiopulmonary bypass.