Impact of Preoperative Renal Function, Postoperative Acute Kidney Injury on Perioperative Catecholamine Therapy and Postoperative Cardiac Rehabilitation

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**Purpose:** To assess the impact of preoperative kidney function and postoperative acute kidney injury (AKI) on the perioperative catecholamine therapy and early phase of postoperative cardiac rehabilitation (EPPCR).

**Methods:** Eight hundreds seventy three consecutive patients (572 male, 301 female, 68 ± 11yo) who underwent elective cardiac surgery were selected and divided into 3 groups depending on preoperative kidney function: non chronic kidney disease (CKD) group, CKD group and hemodialysis (HD) group. Moreover these patients were classified into 2 groups according to the presence of postoperative AKI. We evaluated the effects of preoperative kidney function and postoperative AKI on perioperative catecholamine therapy and EPPCR.

**Results:** In non CKD and CKD group among AKI group, catecholamine index (CI) at initiation of sitting exercise and standing exercise were significantly delayed compared with those in postoperative non AKI group. In non AKI group, progression of postoperative EPPCR were significantly delayed according to the severity of preoperative kidney function (p < 0.05). In non CKD and CKD group among AKI group, sitting, standing, walking exercise and 100 m unassisted walk were significantly delayed compared with those among non AKI group (p < 0.05).

**Conclusion:** EPPCR was delayed according to the severity of preoperative renal function in non AKI group. However, CI at initiation of EPPCR was higher, and progression of EPPCR was more delayed in AKI group than those in non AKI group.