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## THE POTENTIAL RENAL PROTECTIVE EFFECT OF INTRAVENOUS DEXMEDETOMIDINE FOR PATIENTS DURING RADICAL CYSTECTOMY

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**Statement of the Problem:** Peri-operative AKI accounts for 20–25% of cases of hospital-acquired kidney injury. Careful and thoughtful pre-operative assessment, including identifying patients with existing chronic kidney disease and avoiding nephrotoxic medications may reduce the incidence of peri-operative AKI (Acute Kidney Injury). Prospective human studies establishing a renal protective effect of dexmedetomidine are still questionable.

**Purpose:** The purpose of this study is to test the hypothesis that intra-operative intravenous dexmedetomidine infusion could improve early renal function after open radical cystectomy.

**Methodology & Theoretical Orientation:** This randomized comparative study was carried out on 100 patients of either sex, ASA I and II with baseline serum creatinine below 1.4 mg/dl who were submitted for radical cystectomy. The patients were randomly allocated into two groups according to the drug infused intra-operatively; dexmedetomidine group and fentanyl group. Dexmedetomidine group: received loading dose (0.8µg/kg) over 20 minutes, followed by intravenous infusion (0.4µg/kg/h) and fentanyl group: received loading dose (1µg/kg), followed by intravenous infusion (1µg/kg/h) during intra-operative period till end of procedure. Assessment of renal function through evaluation of pre-operative estimated glomerular filtration rate (eGFR) using Modification of Diet in Renal Disease (MDRD) formula based on baseline serum creatinine, serum cystatin C level at 24 hours post-operative, daily post-operative serum creatinine for one-week post-operative and post-operative eGFR using MDRD formula.

**Findings:** This study showed that post-operative renal function was similar to pre-operative values in both groups and no statistically significant renal protective effect of dexmedetomidine could be detected.

**Conclusion & Significance:** Intra-operative infusion of dexmedetomidine has no statistically significant 'reno protective' effect in the early post-operative period after radical cystectomy up to one-week post-operative as evaluated by serum creatinine, eGFR and serum cystatin C level.