

## Pre-pregnant kidney function and adverse pregnancy outcome in women without chronic kidney disease.

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**Background and Objectives:** Since the association between pre-pregnant kidney function and adverse pregnancy outcome was studied only in patients with chronic kidney disease (CKD), we performed the study to identify the effect of kidney function on adverse pregnancy outcome in women without CKD. **Methods:** Among 11,059 pregnant women who delivered in a tertiary care hospital between 2003 and 2015, 1626 women with singleton pregnancy who had pre-pregnant serum creatinine (SCr) data and did not have evidence of CKD were included in the study. The main factor of the study was estimated glomerular filtration rate (eGFR). The main pregnancy outcome was the composite of preeclampsia, preterm birth, low birth weight or newborn asphyxia. **Results:** Of 1626 pregnant women (mean age, 32.8 years), 65.9% women were nulliparous and 18.8% had at least one comorbidity. In the multivariate logistic regression analysis, pre-pregnant SCr and eGFR were not associated with the development of composite pregnancy outcome. In the subgroup analysis according to the status of comorbidities, eGFR in women without comorbidities was not associated either with the development of composite pregnancy outcome. However, in women with comorbidities, increased eGFR (per 10 mL/min/1.73 m<sup>2</sup>) was significantly associated with decreased odds of development of composite pregnancy outcome (odds ratio, 0.814; 95% confidence interval, 0.670 - 0.991;  $p = 0.040$ ). **Conclusions:** Pre-pregnant kidney function was not associated with development of adverse pregnancy outcome in women without CKD. However, eGFR in women with non-CKD chronic disease might predict adverse pregnancy outcome.

## Electrolyte and Mineral Disturbances in Septic AKI Patients undergoing CRRT

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**Background:** Electrolyte and mineral disturbances remain a major concern in patients undergoing continuous renal replacement therapy (CRRT); however, it is not clear whether those imbalances are associated with adverse outcomes in patients with septic acute kidney injury (AKI) undergoing CRRT. **Methods:** We conducted a post-hoc analysis of data from a prospective randomized controlled trial. Two hundred ten patients with a mean age of 62.2 years (136 [64.8%] males) in two hospitals were enrolled. Levels of sodium, potassium, calcium, and phosphate measured before (0 h) and 24 h after CRRT initiation. **Results:** Before starting CRRT, at least one deficiency and excess in electrolytes or minerals were observed in 126 (60.0%) and 188 (67.6%) patients, respectively. The excess in these parameters was greatly improved, whereas hypokalemia and hypophosphatemia became more prevalent at 24 h after CRRT. One and two or more deficiencies in those parameters at the two time points were not associated with mortality. However, during 28 days, 89 (71.2%) deaths occurred in patients with phosphate levels at 0 h of  $\geq 4.5$  mg/dL as compared with 49 (57.6%) in patients with phosphate levels  $< 4.5$  mg/dL. The 90-day mortality was also significantly higher in patients with hyperphosphatemia. Similarly, in 184 patients who survived at 24 h after CRRT, hyperphosphatemia conferred a 2.2-fold and 2.6-fold increased risk of 28- and 90-day mortality, respectively. The results remained unaltered when serum phosphate level was analyzed as a continuous variable. **Conclusions:** Electrolyte and mineral disturbances are common, and hyperphosphatemia may predict poor prognosis in septic AKI patients undergoing CRRT. **Keywords:** Acute kidney injury (AKI), continuous renal replacement therapy (CRRT), electrolyte