

Acute kidney injury during cardiac surgery is a very common complication. 5% to 30% of patients develop some degree of kidney injury, with associated elevated mortality.

The development of sepsis in this same group of patients is associated with an increase of acute kidney injury, as well as mortality, which varies from 17% to 65%.

We conducted a transversal, descriptive, observational, retrospective study on post-operative cardiac surgery patients; study's objective was to analyze the results of using CRRT and its impact on mortality.

## METHODS AND MATERIAL

During the period between January 2006 and January 2011, 3,120 post-operative cardiac surgery patients under extracorporeal circulation were admitted into post-operative therapy. Of these, 16% presented acute kidney injury under creatinine and urine output criteria. Average age was 58.9 years. Demographic variables, surgery type, cardiopulmonary derivation and aortic clamp time, functional class, number of failures, creatinine and urine output, and time at which continuous renal replacement therapy (PRISMA®GAMBRO) began were measured. (Fig. 1)

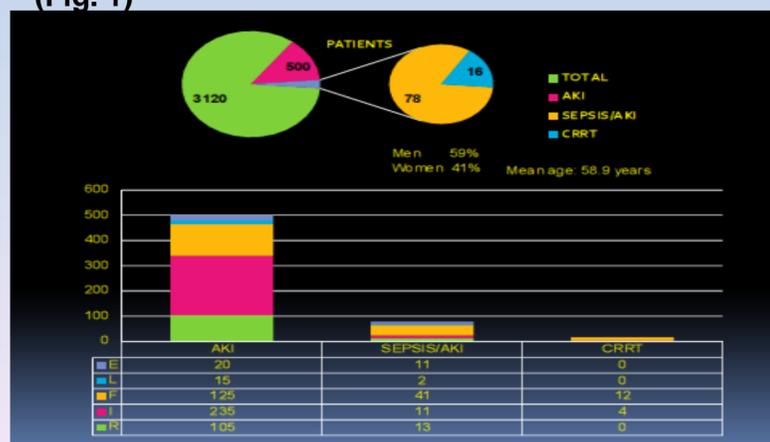


Figure 1

## RESULTS

Three thousand one hundred twenty post-operative cardiac surgery patients were admitted, of which 59% were men and 41% were women, 60% had undergone revascularization, 35% had undergone valve replacement, and 3% had congenital anomalies. Average clamp time was 55 minutes, and average extracorporeal circulation time was 145 minutes. Sixty-seven percent of patients were NYHA functional class III, and 61% had three organ failures. Of the total population 500 patients (16%) developed acute kidney injury (according to RIFLE criteria). Seventy-eight patients had complications with sepsis; of these, 16 patients (20.5%) (I = 4; F = 12) were administered continuous renal replacement therapy as of 43.5 hours following diagnosis, with an initial creatinine level of 3.8 mg/dL, and 1.3 mg/dL at the end of therapy. Initial urea was 65 +/- 6.3 mg/dL and decreased to 34.7 +/- 6.5 mg/dL. (Fig. 2 ) Urine volume increased from 0.3 mL/kg/hr +/- 0.09 to 1.0 mL/kg/hr +/- 0.3.(Fig. 3). Mortality rate was 2.5%. The remaining patients of this group did not receive renal support, and their mortality rate was 17.9%.(Fig.4)

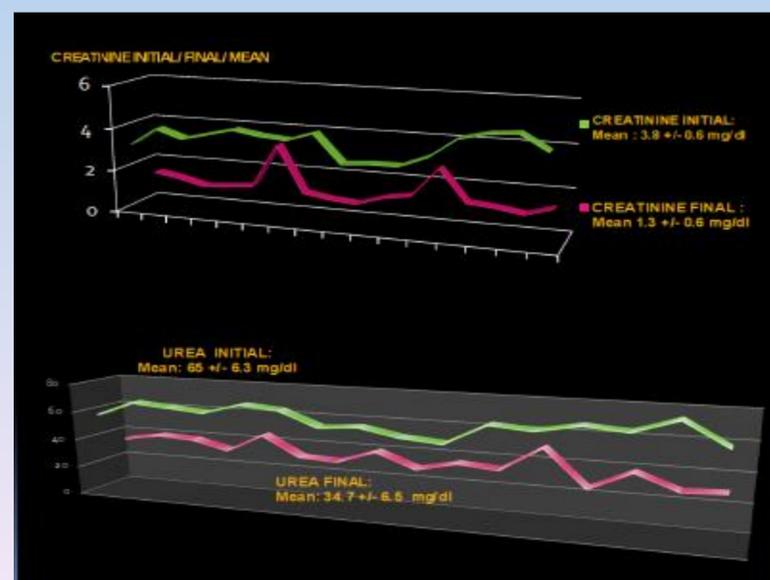


Figure 2

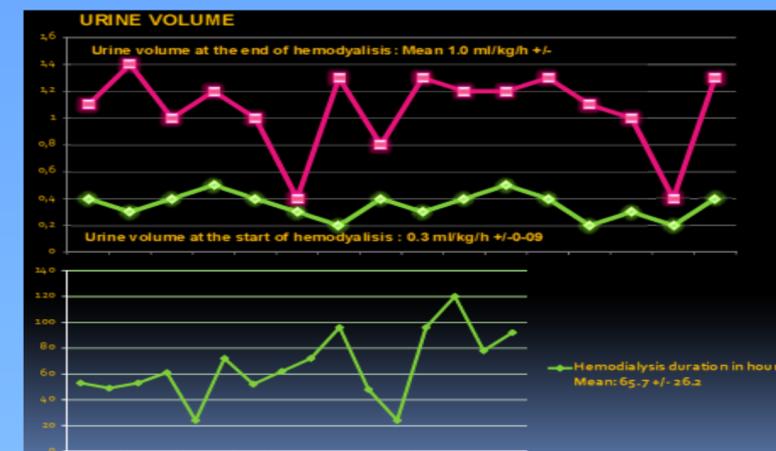


Figure 3

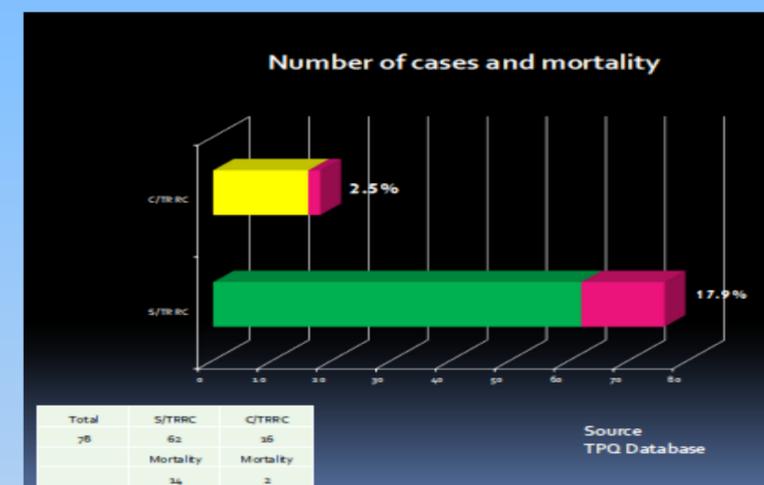


Figure 4

## CONCLUSIONS

The use of renal replacement therapies on post-operative cardiac surgery patients complicated with sepsis and acute kidney injury has a positive impact on morbidity and mortality. Therefore, developing algorithms oriented toward diagnosis and timely treatment becomes necessary.

## REFERENCES

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