

# Clinical efficacy of oXiris® membrane in pediatric critical care: a single-center experience

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## Aim of the study

The aim of the study was to assess the efficacy of oXiris® membrane (which allows not only classical continuous kidney replacement therapy, but also the adsorption of cytokines and endotoxins) in critically ill children.

## Methods

12 pediatric patients had been administered with continuous kidney replacement therapy (CKRT) with oXiris® membrane.

Indications for therapy included septic shock, cardiovascular failure, acute liver failure, or systemic infection, with all patients exhibiting elevated inflammatory markers.

## Results

Total treatment duration ranged from 4 to 238 hours (N=1) per patient, with 1 to 10 hemofilters used. The first filter was replaced after 12 hours, followed by replacements every 24 to 72 hours.

Primary diagnoses included end-stage kidney disease (N=4), malignancies (N=4), multi-organ failure with hemophagocytic syndrome (N=1), cystic fibrosis (N=1), mushroom poisoning (N=1), congenital lymphatic malformations (N=1).

Seven-day survival was 92% (11/12), with an overall survival rate of 83% (10/12). Deaths resulted from post-transplant lymphoproliferative disorder (N=1) and liver failure.

CRP and procalcitonin (PCT) serum levels decreased in 83% (10/12) of patients within 72 hours. Pre-treatment CRP decreased from 14.8 mg/dL (0.1–30.2) to 9.3 mg/dL (0.1–24.1) at 24 hours, and to 6.1 mg/dL (1.3–24.7) at 72 hours. PCT decreased from 6.9 µg/L (1.6–272.5) at baseline to 4.6 µg/L (0.66–69.85) at 24 hours and changed to 7.3 µg/L (0.6–29.52) at 72 hours. Mean arterial pressure (MAP) increased from 76.9 mmHg (59–90.3) at baseline to 82.8 mmHg (76–105) at 24 hours and 87.6 mmHg (67.3–106.7).

Fig. 1. Efficacy of treatment based on survival and clinical biomarkers after 7 days

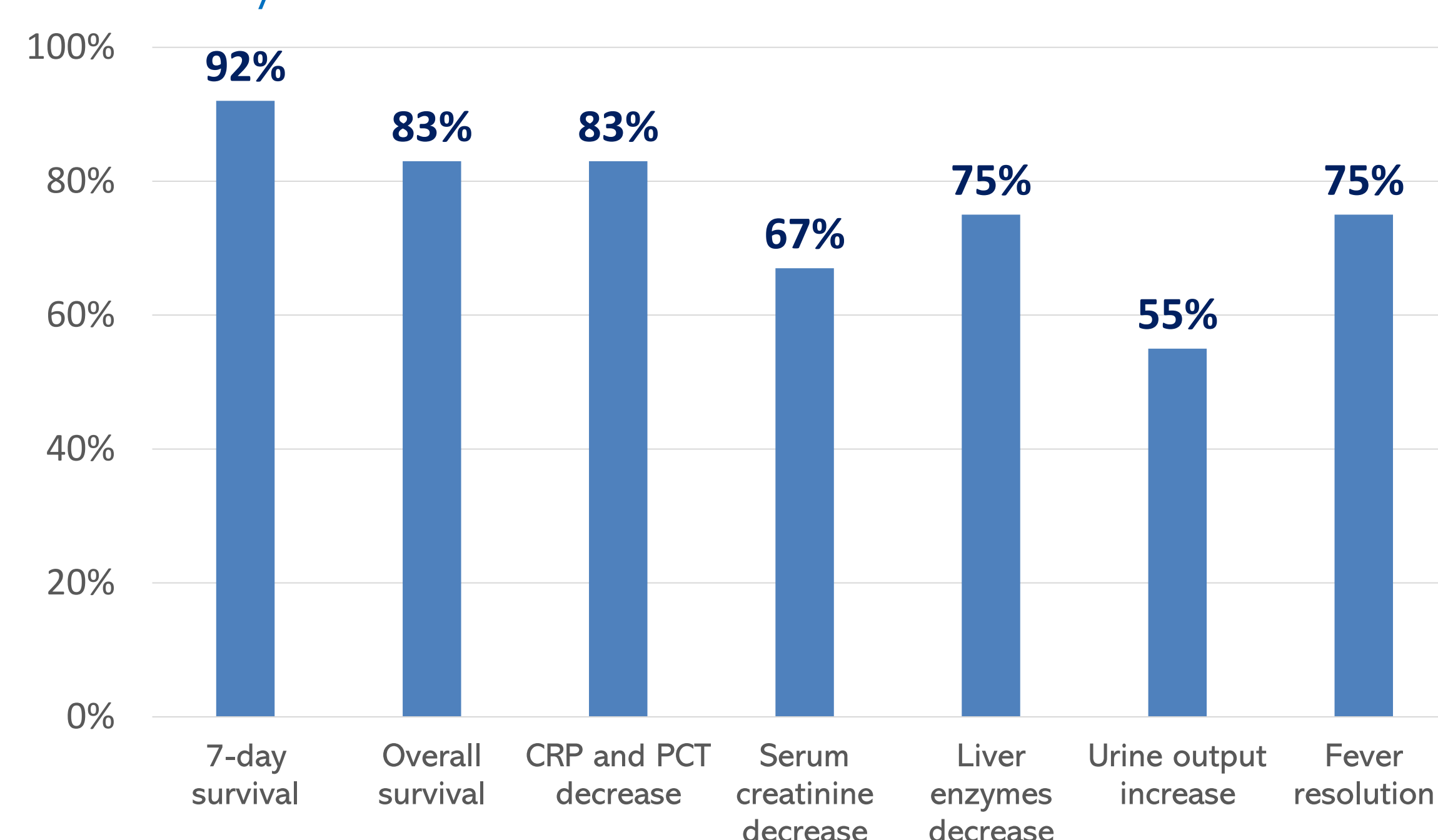


Fig. 2. C-reactive protein level change over time

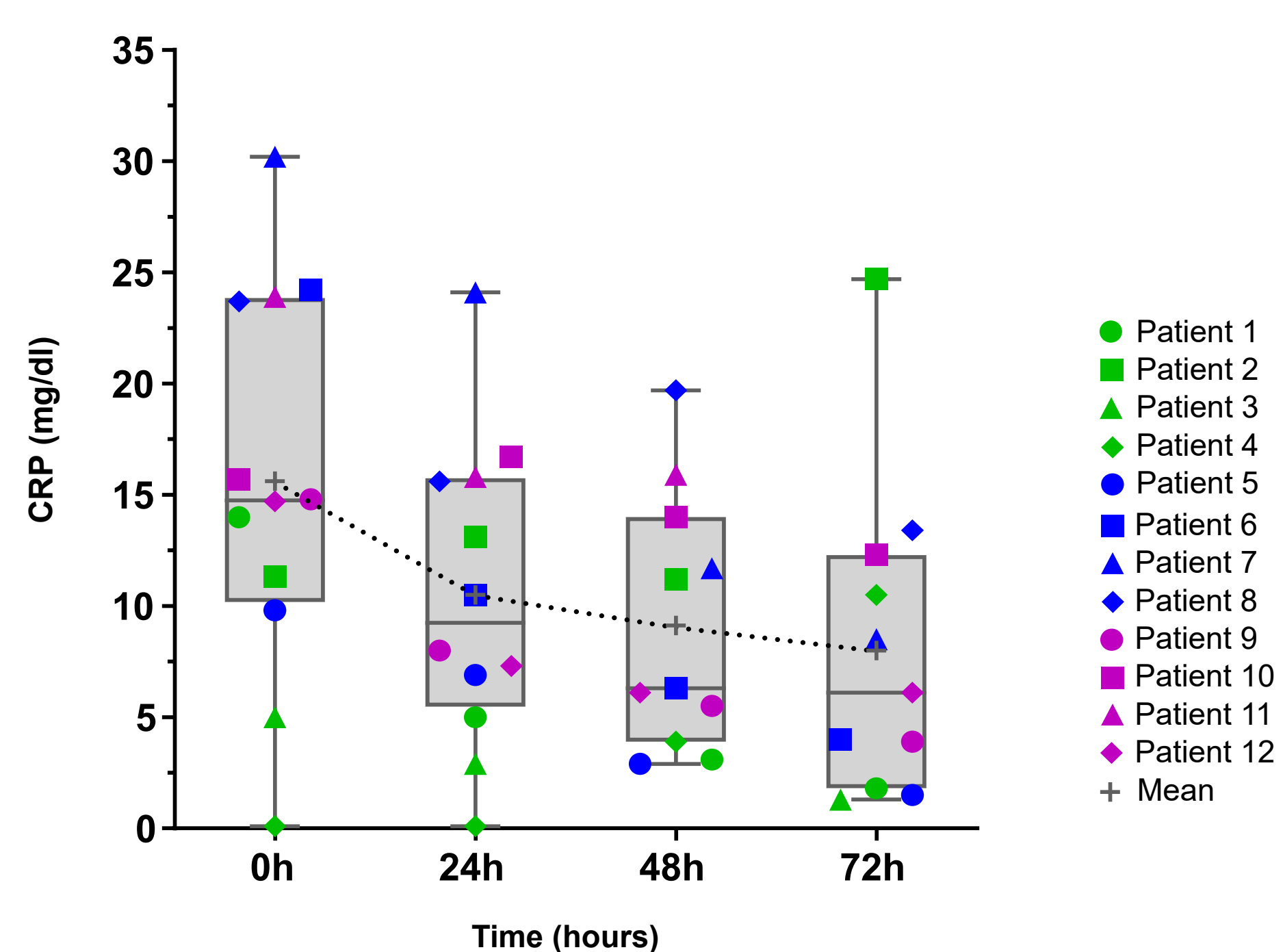


Fig. 3. PCT level change over time

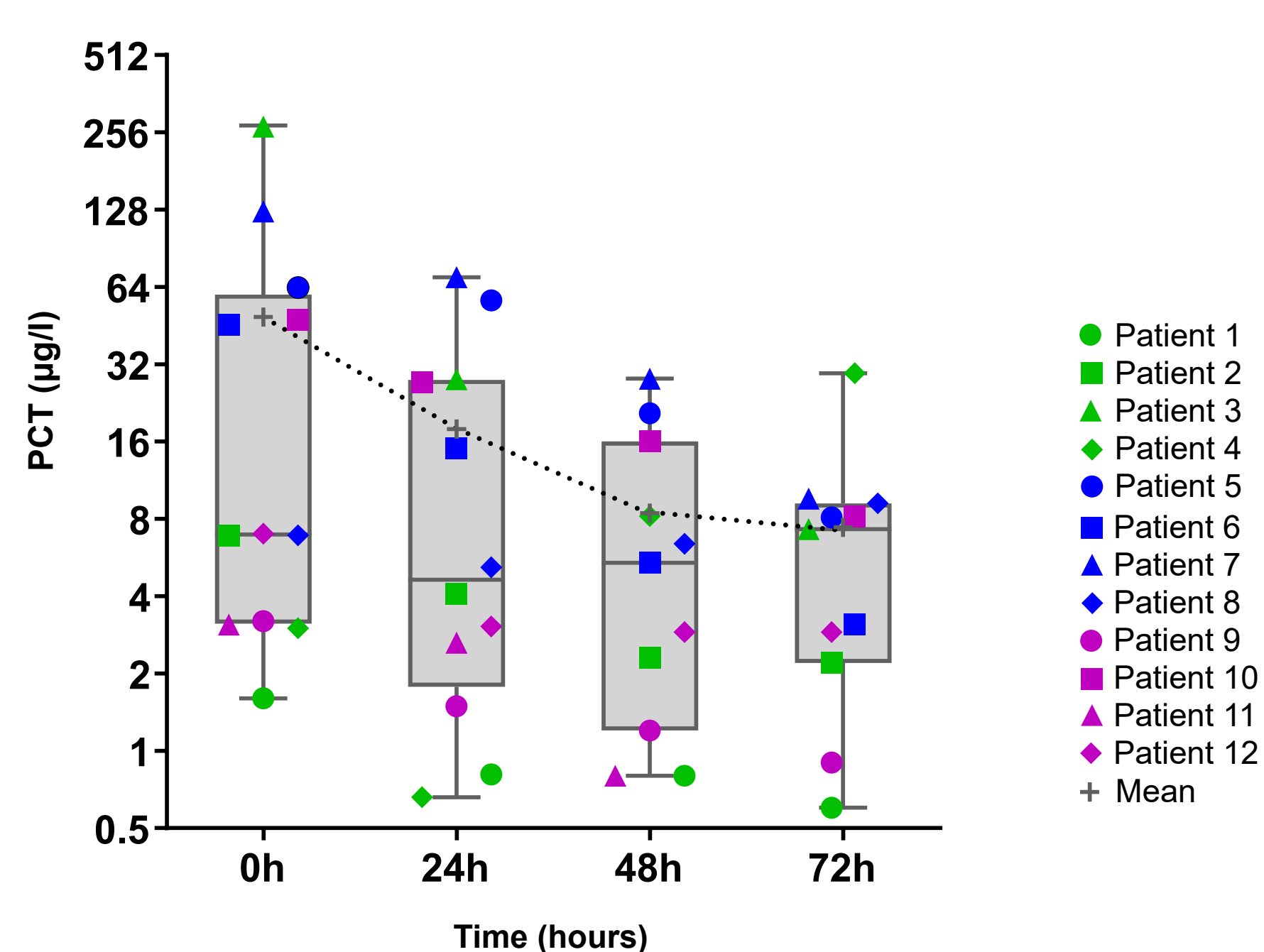
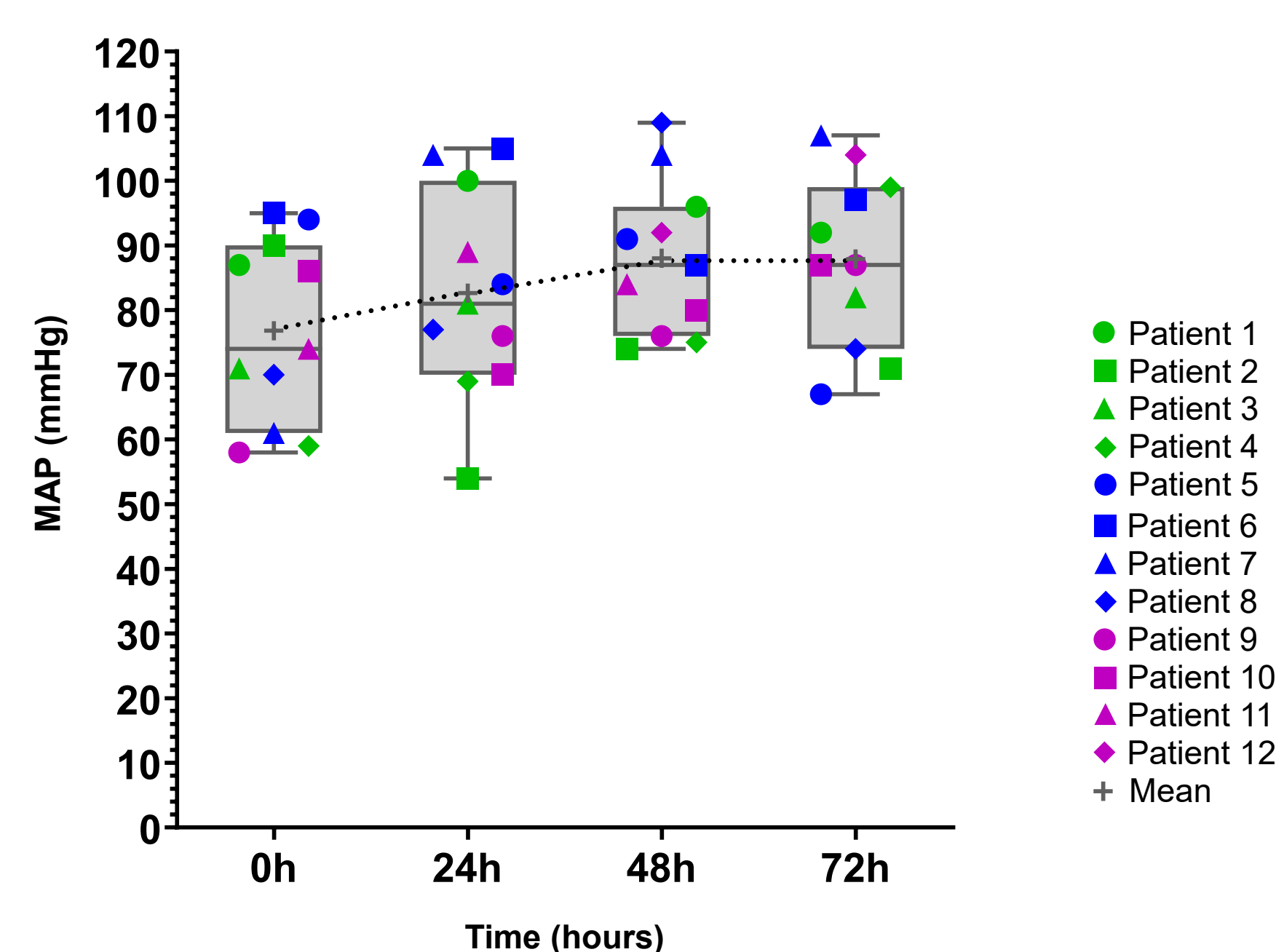


Fig. 4. MAP change over time



## Conclusions

- CKRT with oXiris® appears to be a beneficial adjunctive therapy for pediatric patients with septic shock, systemic infections, or elevated inflammatory cytokines due to other causes.
- It may also aid patients with multi-organ dysfunction, particularly kidney and liver injury.