Baxter

Oxiris

CYTOKINE – ENDOTOXIN AND CRRT HEMOFILTER

Oxiris set: recent publications

Turani F, *et al. Blood Purif.* 2019; 47(Suppl. 3):54–58[1]

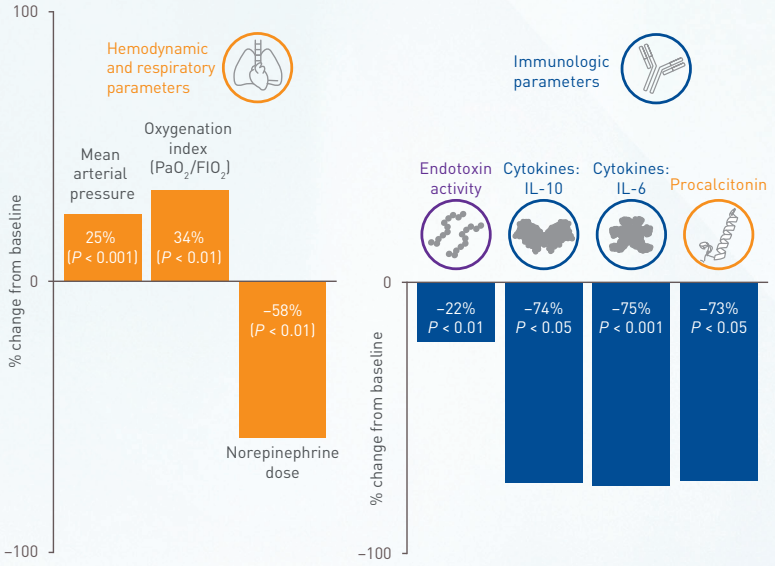
Continuous renal replacement therapy with the adsorbing filter **Oxiris** in septic patients: a case series

- A retrospective observational baseline-controlled study of 60 patients with sepsis/septic shock, of whom 85% had AKI
  - Evaluated the safety of CRRT with the **Oxiris** set as well as the effects on cardiorespiratory, renal, metabolic, and immunologic parameters
  - Data from two Italian ICUs, Jan 2011–Dec 2018

Case presentation: representative profile based on the case series

- Female, 65 years of age
- Admitted to the ICU for sepsis secondary to Gram-negative bacterial infection
- SOFA score = 11
- APACHE II score = 22
- Norepinephrine dose = 0.12 µg/kg/min
- Stage 2 AKI, per AKIN classification
- CRRT was performed using the **Oxiris** set, treatment duration = 74 hours
- CVVHDF, blood flow = 125 mL/min, dialysis dose = 25 mL/kg/h
- Citrate anticoagulation

Changes from baseline in cardiorespiratory and immunologic parameters by end of treatment (74 ± 36 hours)



- Following CRRT therapy with the **Oxiris** set, a significant decrease in SOFA score was also observed ($P < 0.001$)
- The following parameters were unchanged from baseline: HR, CVP, $PaCO_2$, pH, and HCO_3

Results suggest that CRRT with the Oxiris set, in addition to treating sepsis by the Surviving Sepsis guidelines,[2] may be associated with improvements in clinical status and inflammatory mediator levels[1]

Study limitations: 1) The study was a case series with no control group, thus preventing any conclusions about the effectiveness of CRRT with the **Oxiris** set. 2) The patient population was heterogeneous in terms of demographics, infection site, anticoagulation strategy, presence of AKI, and other parameters, and there was a possibility that some patients had lactate levels in the normal range. 3) It is possible the filter was partially saturated with endotoxins when endotoxin activity was measured. 4) Adsorption of antibiotics by the filter may have partially offset the potential benefit of CRRT with the **Oxiris** set. 5) Large well-defined RCTs need to be performed to confirm the observations of these case studies.[1]

Schwindenhammer V, *et al. Blood Purif.* 2019; 47(Suppl. 3):29–35[3]

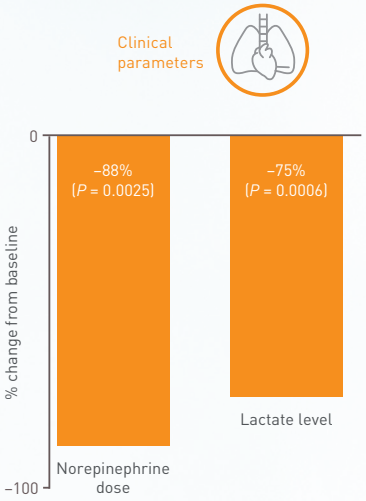
Oxiris use in septic shock: experience of two French centres

- A retrospective baseline-controlled study of 31 patients with septic shock and AKI who underwent CRRT with the **Oxiris** set.
  - Determined the change over time of clinical and biological parameters
  - Data from two French ICUs, Dec 2014–Jan 2019

Case presentation: representative profile based on the case series

- Male, 60 years of age
- Septic shock caused by intra-abdominal infection with Gram-negative bacteria
- SOFA score = 13
- SAPS II score = 83
- Norepinephrine dose = 1.7 µg/kg/min
- Stage 3 AKI, according to KDIGO guidelines
- CRRT was started – the **Oxiris** set was chosen
- CVVH performed for 17 hours
- Dialysis dose = 40 mL/kg/h
- Citrate anticoagulation

Changes from baseline in clinical parameters 48 hours after treatment initiation



- Following CRRT therapy with the **Oxiris** set, pH increased from 7.26 to 7.43 ($P < 0.00001$)
- The following parameters were unchanged from baseline: SOFA score, PaO_2/FIO_2, platelets, and diuresis

In subpopulation analyses, significant improvements in lactate level, but not SOFA score, were observed in patients with either:

- an abdominal infection ($P = 0.0003$) or
- Gram-negative infection ($P = 0.0005$)

Changes in lactate level were not observed in patients with extra-abdominal or non-Gram-negative infections

In this retrospective study of patients with septic shock and AKI, improvements in hemodynamic status, pH, and lactatemia were observed after initiation of CRRT with the Oxiris set[3]

Study limitations: 1) Small retrospective study with no control group, thus preventing any conclusions about the effectiveness of the **Oxiris** set. 2) The patient population was heterogeneous in demographics, infection site, anticoagulation strategy, and other parameters, including both relatively stable and severely ill patients. 3) Large well-defined RCTs need to be performed to confirm the observations of these case studies.

Indication

The **Oxiris** set is indicated for use only with the **PrismaFlex** control unit or with the **PrisMax** control unit (in countries where **PrisMax** is cleared or registered). It is intended for patients in need of blood purification, including continuous renal replacement therapy, and in conditions where excessive endotoxin and inflammatory mediator levels exist. This set is intended for use in the following veno-venous therapies: SCUF; CVVH; CVVHD; CVVHDF. All treatments administered with the **Oxiris** set must be prescribed by a physician. The size, weight, state of uremia, cardiac status, and general physical condition of the patient must be carefully evaluated by the prescribing physician before each treatment. **Please refer to the Instructions for Use for the full list of contraindications.**[4]

References

1. Turani F, *et al. Blood Purif.* 2019; 47(Suppl. 3):54–58; 2. Rhodes A, *et al. Crit Care Med.* 2017; 45:486–552;
3. Schwindenhammer V, *et al. Blood Purif.* 2019; 47(Suppl. 3):29–35; 4. **Oxiris** product IFU. July 2018.

Abbreviations

AKI, acute kidney injury; AKIN, Acute Kidney Injury Network; APACHE II, Acute Physiology and Chronic Health Evaluation II; CRRT: continuous renal replacement therapy; CVP, central venous pressure; CVVH, continuous veno-venous hemofiltration; CVVHD, continuous veno-venous hemodialysis; CVVHDF, continuous veno-venous hemodiafiltration; FIO_2, fraction of inspired oxygen; HCO_3, bicarbonate; HR, heart rate; ICU, intensive care unit; IL, interleukin; KDIGO, Kidney Disease: Improving Global Outcomes; $PaCO_2$, partial pressure of carbon dioxide; PaO_2, partial pressure of oxygen; RCT, randomized controlled trial; SAPS II, Simplified Acute Physiology Score II; SCUF, slow continuous ultrafiltration; SOFA, Sequential Organ Failure Assessment.

For safe and proper use of the products mentioned herein, please refer to the Instructions for Use.[4]

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