Acute renal failure in the newborn: an ‘orphan’ disease

Acute renal failure in neonatal intensive care units reaches incidence percentages ranging between 5% and 20% of the cases observed. Acute renal failure (ARF) is particularly high as a result of toxic or obstructive conditions. In children with congenital cardiopathy, the risk of acute kidney injury (aKi) is particularly high. The treatment designed for neonatal patients

Whereas critical adult patients receive renal support with advanced devices and the most stringent safety features, acute renal failure in neonates is usually treated with adult devices. To avoid this, a special renal replacement therapy device has been developed in order to meet the safety and efficacy requirements for renal replacement therapies in neonatal patients. CARPEDIEM™ was designed to offer a truly ‘paediatric’ device:

- Miniature and portable
- Safety and efficacy for neonates weighing less than 10 kg
- Small patients
- Carpediem™ was designed to offer a truly ‘paediatric’ device

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The aims of Research & Development.
Minimum invasiveness, maximum efficacy: the added value of CARPEDIEM™

Uniqueness

CARPEDIEM™ is the only device on the market capable of performing ultrafiltration and haemofiltration in newborn babies with a body weight between 2.5 and 10 kg.

The painstaking research and development work in collaboration with the Department of Nephrology and iRRiV of Vicenza has allowed developing this device equipped with high-precision scales with an error resolution of 1 g, as well as 'designing' new peristaltic pumps featuring 3 rollers to ensure the highest precision and the most effective flow safety.

In addition, CARPEDIEM™ comes in a pre-assembled kit for specific treatment of each single patient with the possibility of choosing 3 types of different haemofilters based on the patient’s weight.

The attention paid to flexibility of the treatment provides the possibility of choosing - with the same kit - between isolated ultrafiltration and haemofiltration in pre- or post-dilution.

High Performance and Efficiency thanks to personalisable programming of:

- Peristaltic pumps speed with 3 rollers for maximum precision of the blood, infusion and ultrafiltrate flow
- Highly sensitive blood leakage and air detection sensors
- Acoustic and visual warnings
- Heparin pump
- Fluid balance control supervised by high-precision scales

Reduced priming volume

CARPEDIEM™ guarantees a priming volume of just 25 mL. Equipment with a filter detector is capable of automatically calculating the priming volume required based on the haemofilter chosen.

Easy to handle and transport

It comes with a trolley including an IV pole for easy transport.

Flexibility in the treatments

Possibility of performing continuous ultrafiltration and haemofiltration treatments with the same disposable both in pre- and in post-dilution for a maximum time of 24 hours.

Uniqueness

Unique device capable of performing ultrafiltration and haemofiltration treatments in newborn babies with a body weight between 2.5 and 15 kg.

Ease of use

The intuitive and user-friendly software and the cutting-edge innovative disposable allow installing the circuit in total safety.

Compact

Thanks to its small size (45 x 50 x 22 cm), CARPEDIEM™ can be easily placed inside neonatal intensive care units.