

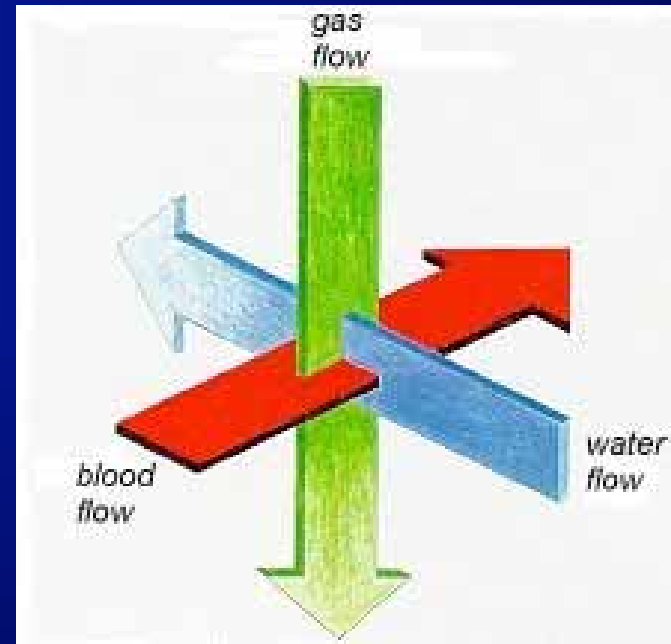
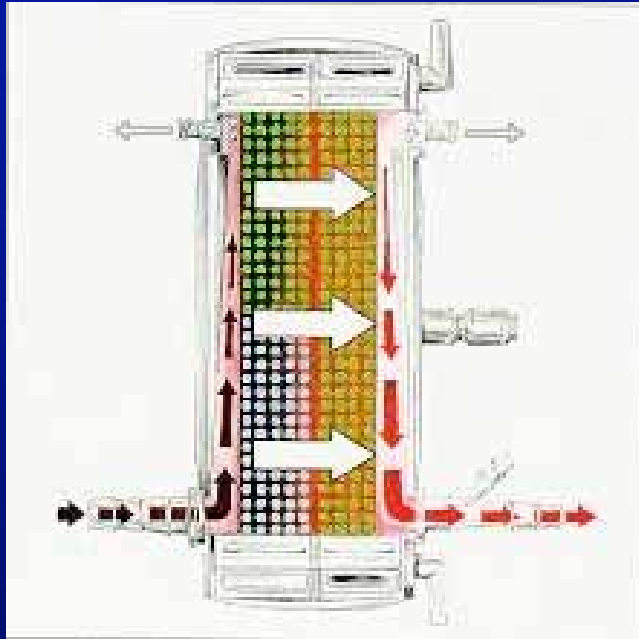
A landscape photograph featuring a vibrant rainbow arching across a blue sky with light, wispy clouds. The foreground is filled with lush green trees and a grassy field. In the distance, a multi-story building is partially visible through the foliage. The overall scene is bright and serene.

RCH Experience With The Jostra Quadrox^D Oxygenator For ECMO

Technical Data Quadrox^D

Blood flow rate	0.5 - 7 l/min
Total priming volume	250 ml
Effective surface area gas exchange	1.8 m ²
Material of oxygenation membrane	Polymethylpentene
Effective surface area heat exchange	0.6 m ²
Material of heat exchange capillary	Polyethylene

Quadrox^D Hollow fibre-True membrane



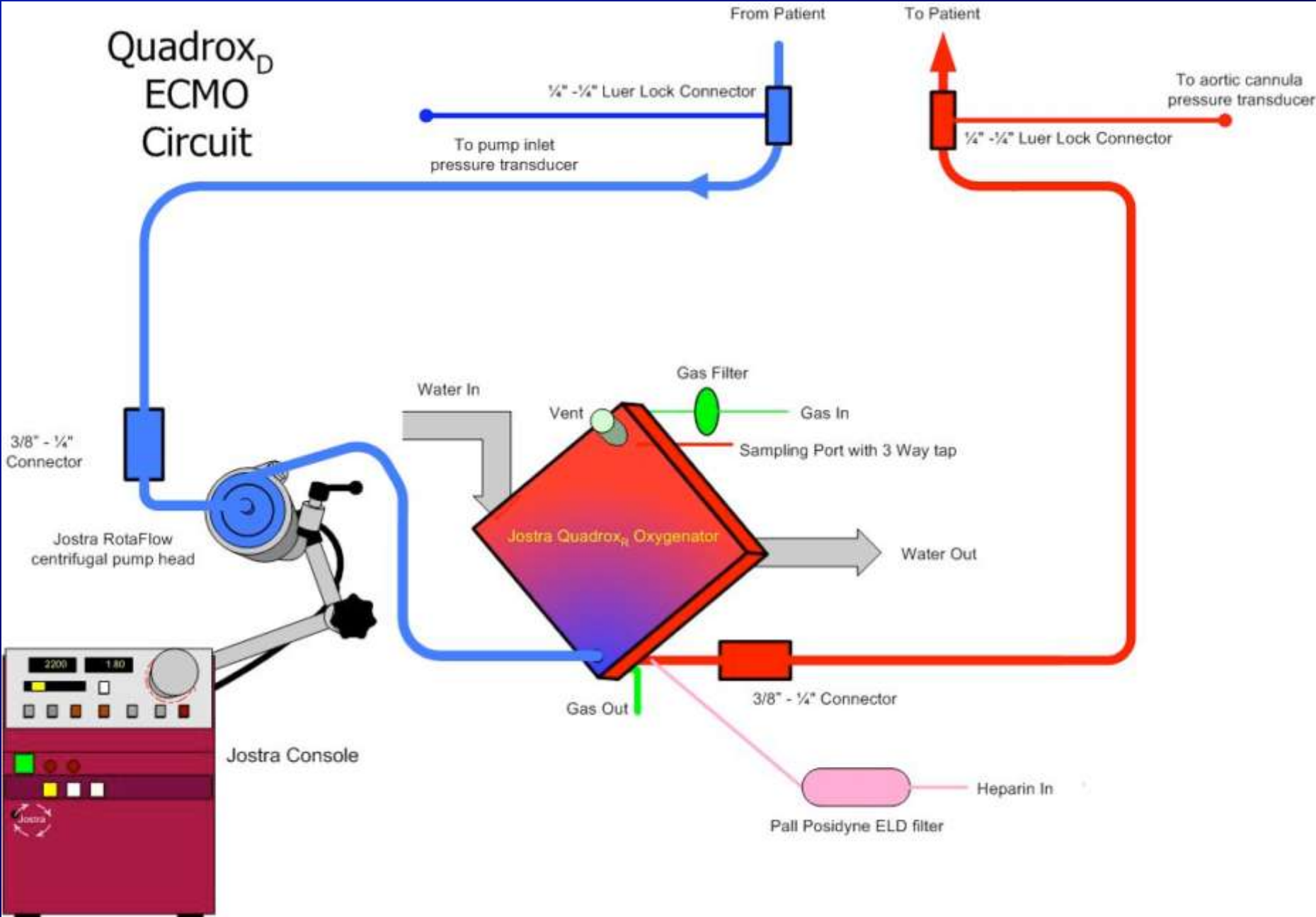
Patient Details

- n = 41 (1st case 11/2001)
- Mean weight: 12.45 kg (median 4.75 kg)
- Mean age: 25 months (median 4 months)
- patients following cardiac surgery: 20
- Mean duration of support hours: 166 (median 126)

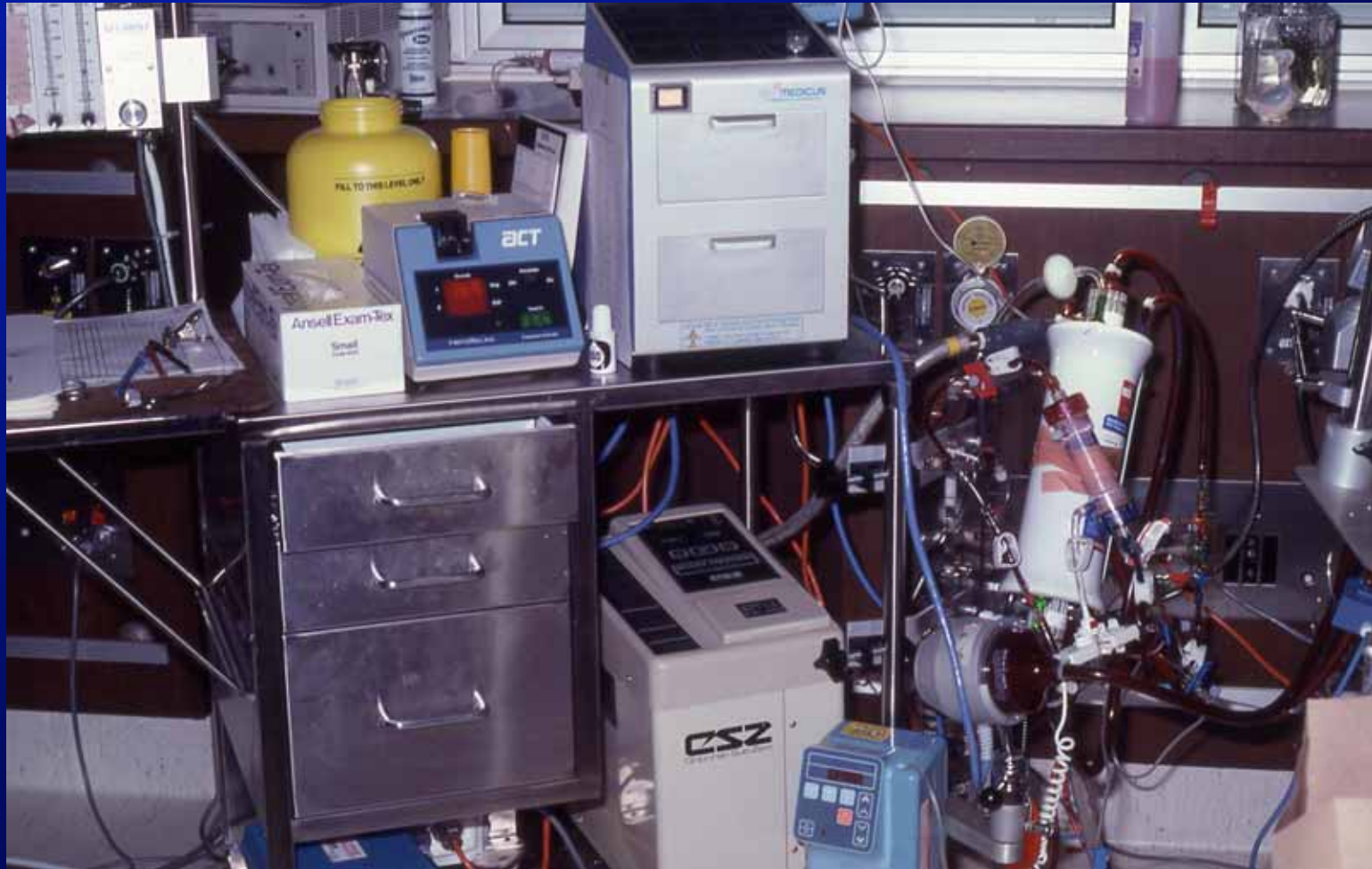
Number of Oxygenators Used

- Severe sepsis (Klebsiella) underlying acute leukaemia - **1** (141.5 hours)
- s/p BT shunt – **1** (2 hours)
- s/p AVSD – **2** (141.5 + 20.5 hours → VAD)
- s/p PA reconstruction – **1** (268.8 hours)
- s/p Truncus repair – **3** (148 + 158 + 149.4 hours)
- Meconium aspiration – **1** (216 hours)
- s/p PA band – **1** (105 hours)
- Bridge to Transplant – **3** (1119 Hours)

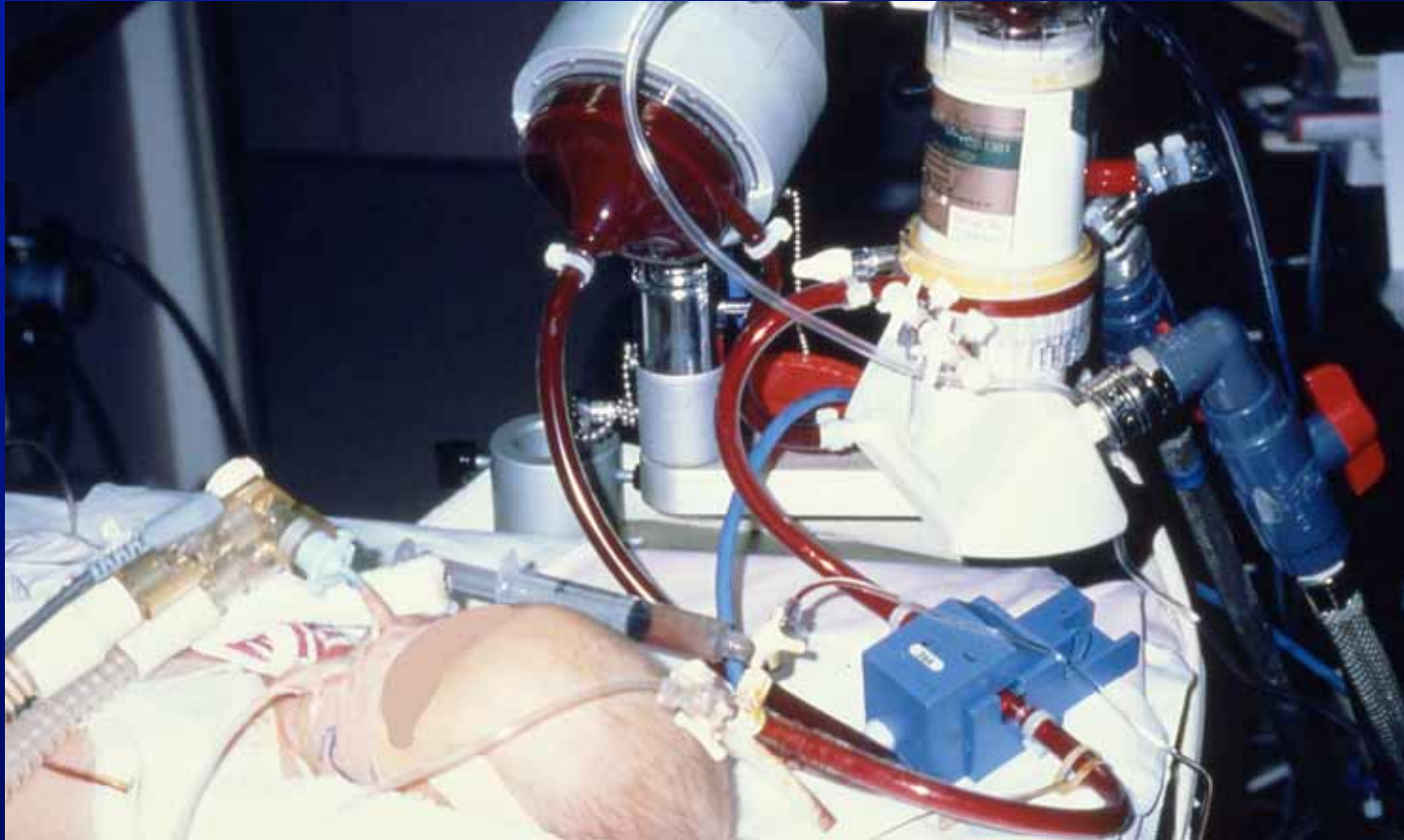
Quadrox_D ECMO Circuit



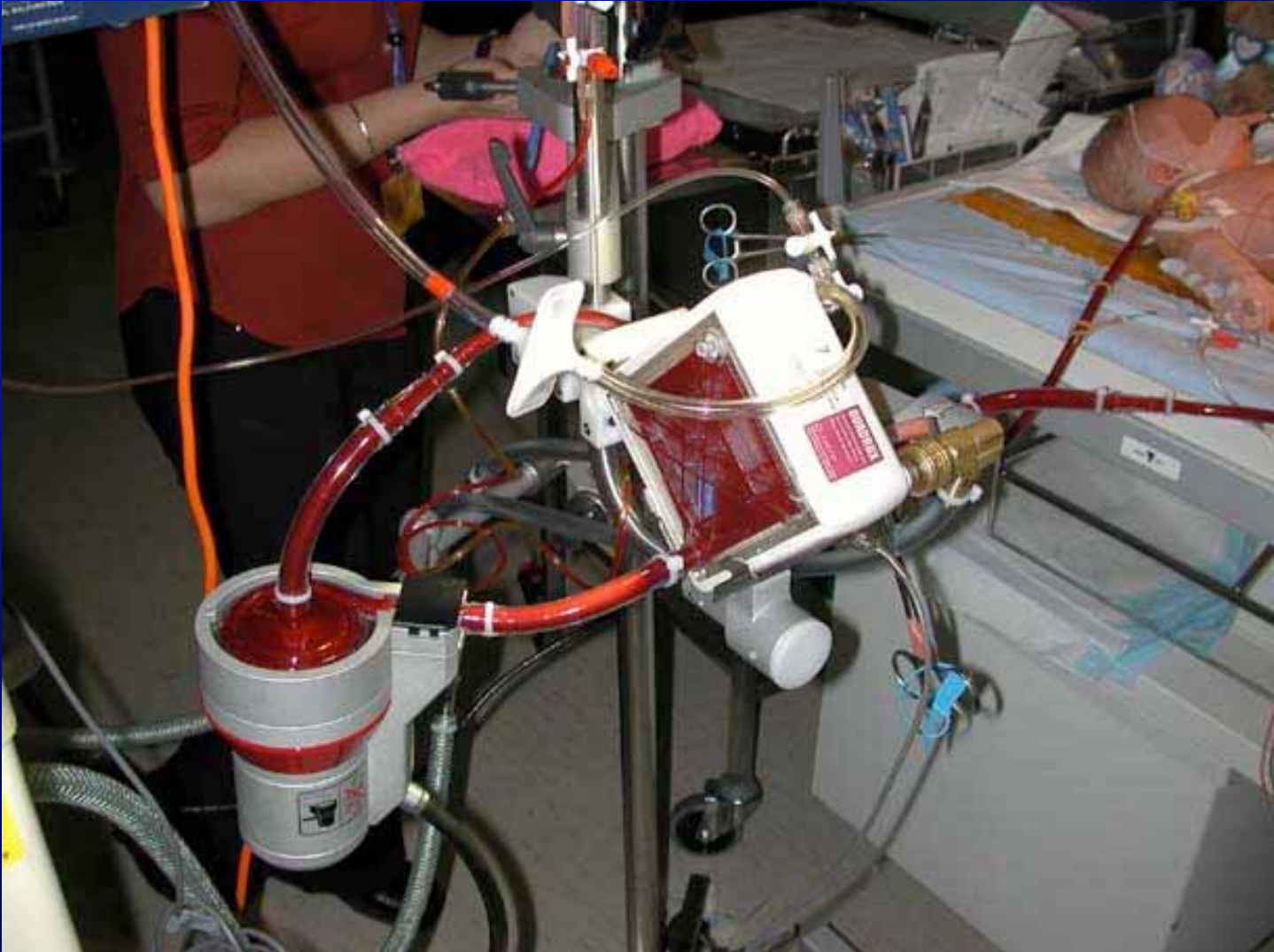
Avecor ECMO



Minimax ECMO

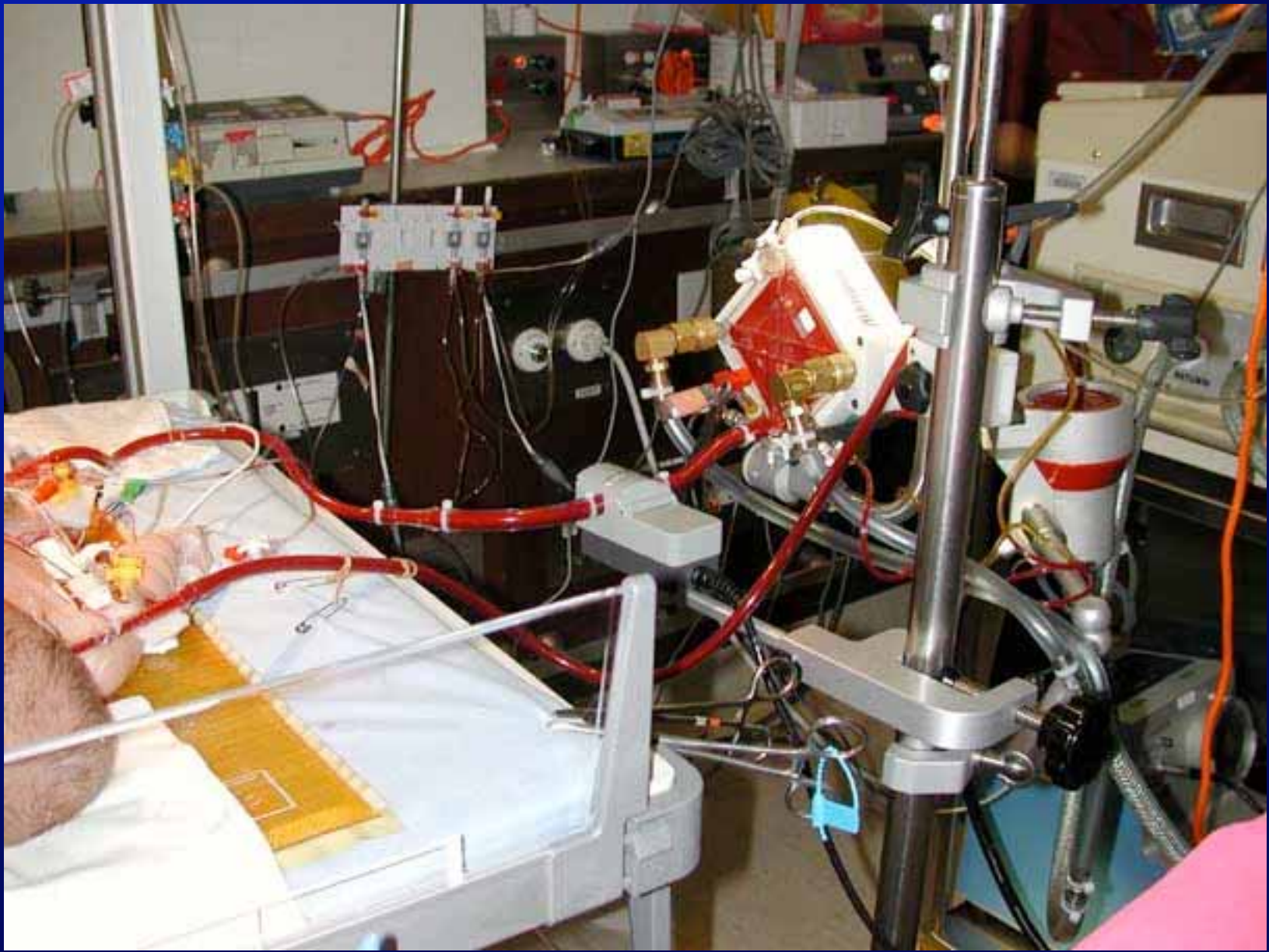


Quadrox^D ECMO









Heparin Coating

- Hydrophilic heparin molecule can't interact with a polymeric surface when no functional groups are present.
- Some coating techniques show a negative influence on the physicomechanical behaviour of the used polymer or a toxic substance has to be used to enable a stable binding of heparin to the polymer surface

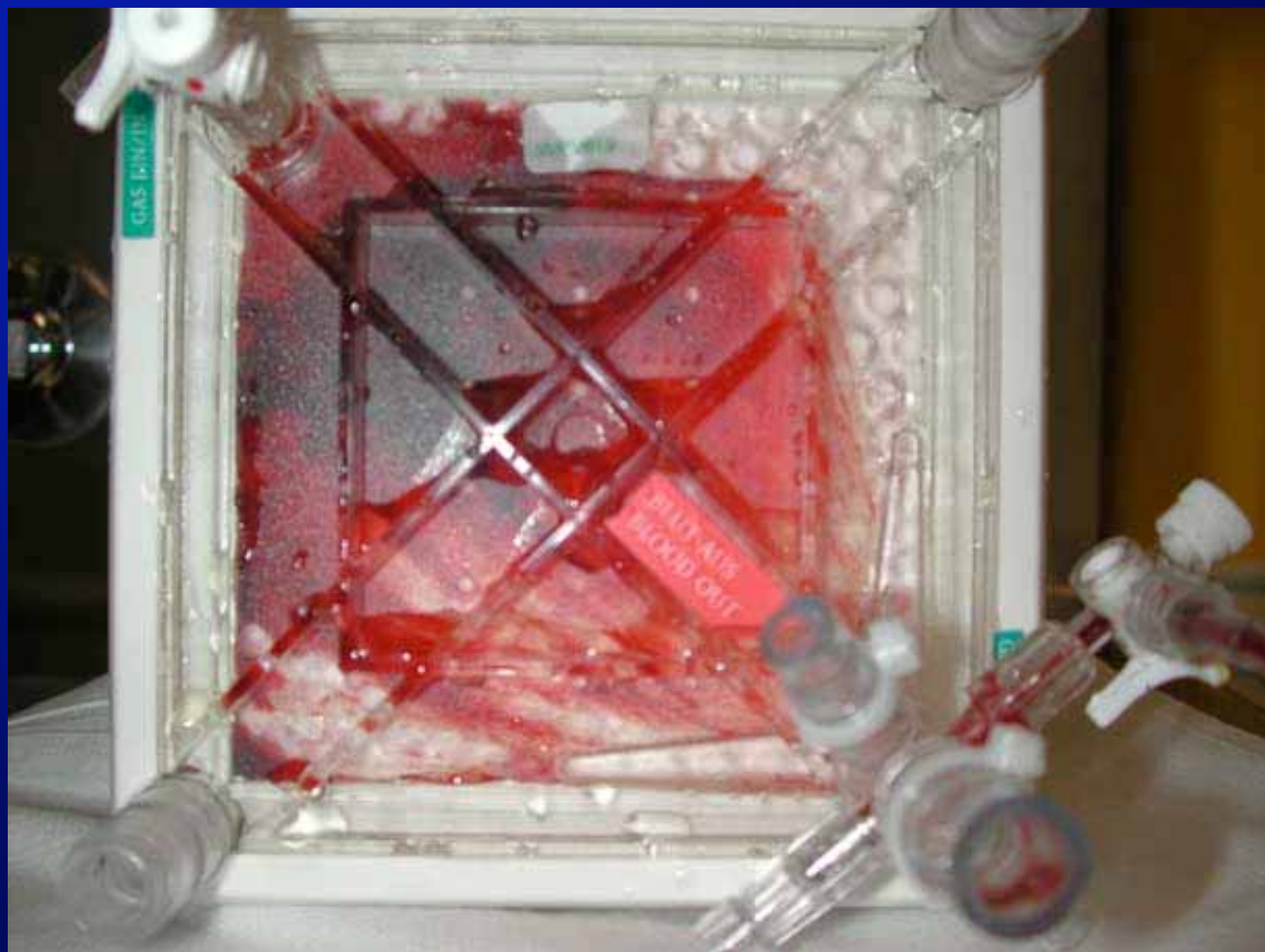
Bioline Coating

- Polypeptides are a natural & nontoxic surface active substance that are used to bind heparin to the polymer.
- Absorption can take place on hydrophilic & hydrophobic surfaces.
- Ionic & covalent bonding is achieved, to preserve heparin activity & stability

Bioline Coating

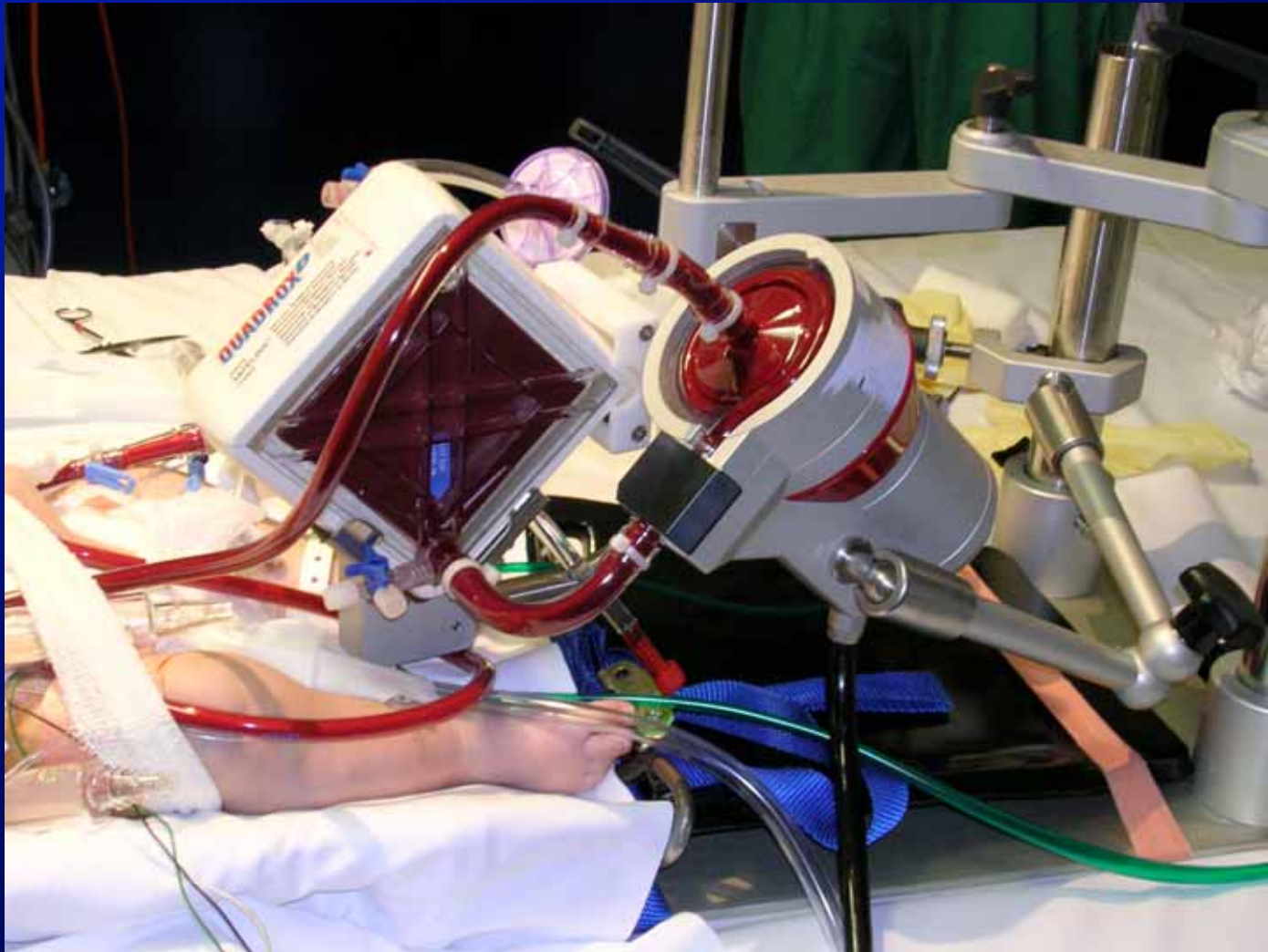
(study by Tayama E, *Artif Organs*, 24(8), August 2000, 618 - 623)

- Full heparinisation (3mg/kg)
- No clinical impact
- Thrombogenicity, fibrinolysis & platelet activation were not influenced
- No clinical effect for haemostasis time, post-operative bleeding or autologous blood transfusion





Quadrox D for transport on ECMO



Quadrox D for transport on ECMO



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