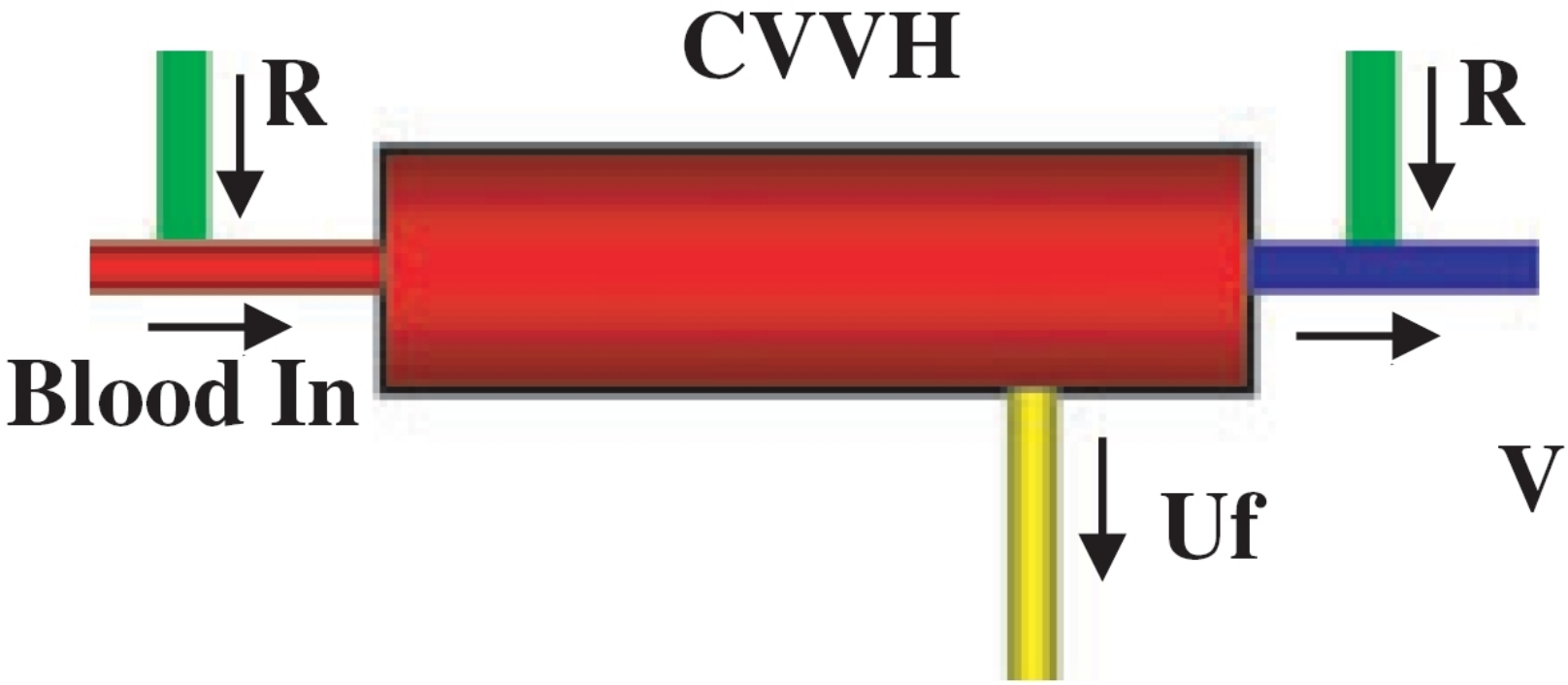
14. Renal replacement therapy – a beginner’s guide

Indications for RRT

Oligo / anuric AKI (or ESRF) & 1 or more of:

- Acidosis (pH < 7.2) especially if associated with cardiovascular compromise / vasopressor resistant septic shock
- Hyperkalaemia (K+ > 6.5 OR rapidily rising)
- Uraemia (urea > 35mmol/l)
- Fluid overload
- ? Encephalopathy
- ? Hyperpyrexia



Qb = 100-200 ml/min Qf = 10-30 ml/min

K = 15-45 L/24 h

https://moodle.sgul.ac.uk/mod/resource/view.php?id=52970

Vascular access

- Correct length for site of insertion.
- Co-location with CVP line and the potential for “drug steal”.
- Checking flow rates before stitching them in (20ml syringe).
- Locking with 5,000iu/ml heparin
- Troubleshooting position

Prescribing therapy

- Rate of fluid replacement (pre dilution + post replacement) 25-35ml/kg/hr
- Proportion pre dilution : post replacement usually 1:2 -1:3.
- Anticoagulation – yes or no
- Fluid removal – usually 50-300ml/hr

Problems

- Access pressures
- Blood clots
- Thrombocytopaenia
- Hypothermia
- Coagulopathy
- Hypomagnesaemia / hypophosphataemia
- Circuit and therefore blood loss
- Drug loss

Controversies

- When to start
- Intensity / dose of therapy
- When to stop
- Therapy intervals
- CVVHF vs CVVHDF vs iHD

- The role of frusemide