Repeat 50ml sodium bicarbonate infusion, up to a max dose of 500ml/24hrs\*

**Arterial blood gas 1-2 Hours post- sodium bicarbonate infusion**

**pH < 7.30**

**pH ≥ 7.30**

**Eligible and randomised**

**Control**

***No IV sodium bicarbonate \****

**pH < 7.30**

**pH ≥ 7.30**

**Admitted to critical care unit and meet all inclusion criteria**

* Adult (aged ≥18 years);
* Metabolic acidosis (pH <7.30 and PaCO2 <6.5 kPa); and
* AKI KDIGO stage 2 or 3, defined as any one of the following 3 criteria:
  + Serum creatinine ≥2.0 times baseline

or

* + Serum creatinine ≥354 µmol/L, AND either a rise of ≥27 µmol/L within

48 hours or serum creatinine ≥1.5 times baseline

or

* + Urine output of <0.5 ml/kg/h for ≥12 hours

*And none of the exclusion criteria.*

Monitor pH for duration of critical care stay\*, or until initiation of KRT or 90 days, whichever comes first

**Intervention**

***IV 8.4% w/v sodium bicarbonate \****

First dose 50 ml over 30-60 minutes (Max dose 500 ml/24 hours)

\* After randomisation, indications to commence KRT may subsequently develop and in these situations KRT may be initiated at the discretion of the treating clinician. As a guide, KRT may be considered where at least two of the following criteria are present:

1. urine output <0.3mL/kg/h for at least 24 hours;
2. arterial pH <7.25 despite adequate volume resuscitation, or in the intervention group an arterial pH <7.25 after adequate administration of sodium bicarbonate (defined as sodium bicarbonate treatment for 24 hours or administration of the maximum 500ml/24hours, as per algorithm above);
3. hyperkalaemia (serum potassium >6.5 mmol/L);
4. fluid overload intractable to diuretics.