Ammonium Chloride Test

Indication:
Diagnosis of renal tubular acidosis.

Contraindications:
None

Precautions:
None

Side Effects:
Frequently causes nausea.

Pre-Procedure:
- Obtain patient’s weight.
- Order Ammonium chloride from pharmacy. Ammonium chloride is not held in stock, pharmacist has to order this in. It supplied as a powder and is usually made up in 500mg capsules.
- **Dose 0.1g/kg Ammonium chloride.** Pharmacy require a few days notice.
  - Explain test fully to patient and give appointment letter. Arrange appointment for 07:50.
  - Inform lab. staff, if possible give one weeks notice.
  - Inform Registrar on call of date and time of test. Obtain signed prescription.
  - Check stock/order bottle of liquid paraffin. This is added to the universal containers to keep the pH of urine collection stable.
  - Request case notes from endocrine secretary and note this in diary and on request form. Patient is admitted as a day case.
  - Patient must fast overnight. May have normal breakfast and meals throughout test.
  - Instruct patient to start drinking fluids at around 06:00 am and if possible empty bladder as close to 7:00 am as possible. Patient should be asked to note times of any urine passed since rising.

Procedure:
An hourly fluid intake of around 200-300 ml should be maintained throughout test.
Urine samples to be collected hourly e.g. first sample 07:00 to 08:00
- Admit patient to a single room, one nurse dedicated to this test.
- **08:00** provide container and ask patient to completely empty bladder. Aliquot from each void transferred immediately into universal container containing 5 mls of liquid paraffin. Time of collection should be clearly stated on each universal containers and containers should be numbered 1 to 9.
- **08:05** Ammonium chloride 0.1g/kg orally in capsules taken over 1 hour to avoid gastric irritation.
  - Nurse should remain with the patient and administer capsules at 5 minute intervals. Have appropriate bowls to hand.
- **09:00** Hourly urine collection and **blood sample** for urea, electrolytes and bicarbonate.
- 10:00 hourly urine collection.
• **11:00** hourly urine collection and **blood sample** for urea, electrolytes and bicarbonate.

• Continue to collect hourly urine samples until 16:00hrs.

**Tubes and forms:**

• Brown serum gel tubes for blood samples for urea, electrolytes and bicarbonate.

• Urine samples for pH in universal containers numbered 1-9, marked with time of collection and each containing 5ml liquid paraffin.

• WGH combined forms.

• Send in four batches at: **09:00 11:00 15:00 16:00**.

**Interpretation:**

Urine pH should fall to 5.5 or less. Plasma bicarbonate should fall to confirm absorption of ammonium chloride.