**Hypoglycaemia**
Emergency treatment (unconscious, fitting, NBM, unable to swallow)
- 1mg glucagon IM
- Wait 10 minutes and recheck blood glucose <4mmol/L
- 160ml 10% glucose IV over 15 minutes
- Repeat blood glucose after 10 minutes
- If still <4, repeat infusion

**Narrow complex tachycardia**
- Sinus massage / Valsalva
- If fails, 6mg IV adenosine + saline flush
- If fails, 12mg IV adenosine + saline flush

**Bradycardia**
Compromised (BP <90mmHg, HR <40, ventricular arrhythmia, heart failure)
- 500 micrograms atropine IV

**AF / atrial flutter**
New onset (<48h)
- DC cardiovert, if fails metoprolol up to 5mg IV over 4-5 minutes

**Pre-existing (>48h)**
- Bisoprolol 5-10mg PO, flecainide 2mg/kg IV over 30 minutes (discuss SpR+, better for <65y, no cardiac history, not in flutter)

**STEMI**
- 300mg aspirin PO
- 5-10mg IV morphine + 10mg IV metoclopramide
- GTN spray
- Phone Hartbury suite (BRI out of hours)

**NSTEMI**
- 300mg aspirin + 300mg clopidogrel PO
- 2.5mg fondaparinux SC od (if creatinine clearance <20ml/min use enoxaparin 1mg/kg od)
- Atorvastatin 40mg ON
- Bisoprolol PO (HR>70, BP >110)

**Acute Asthma**
- Sit up + O2
- 5mg salbutamol nebulised
- 0.5mg ipratropium nebulised
- 100mg IV hydrocortisone / 40-50mg prednisolone PO
- CXR (exclude pneumothorax)

**Life-threatening**
- 1.2-2g IV magnesium sulphate

**Pulmonary oedema**
- Sit up
- Oxygen
- 2.5-5mg diamorphine slow IV
- 40-80mg furosemide slow IV
- GTN spray 2x puffs (not if sBP <90mmHg)
- GTN 2-10mg/h IV infusion (keep sBP >110mmHg)

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- 1mg glucagon IM
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- 160ml 10% glucose IV over 15 minutes
- Repeat blood glucose after 10 minutes
- If still <4, repeat infusion

**>4mmol/L and conscious**
- Carbohydrate snack – 2 biscuits / 1 slice bread / 200-300ml milk
**Diabetic ketoacidosis**

*Discuss with ITU if:*
- **pH <7.3, age <17 or >75, cardiac or renal failure, pregnant, Na<120, K>6, septic, low BP, acute cardiac event**

**Tests**
- \(\Delta\) lab blood glucose (not capillary), venous pH <7.3, venous HCO\(_3\) <15, capillary ketones >3mmol/L or urine ketones 2+
- U+E, FBC, trop T, ECG, CXR, MSU, cultures

**Fluids and potassium supplementation**

<table>
<thead>
<tr>
<th>Plasma K+</th>
<th>Add KCl</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;3.5 mmol/L</td>
<td>40 mmol</td>
</tr>
<tr>
<td>3.5-5.0 mmol/L</td>
<td>20 mmol</td>
</tr>
<tr>
<td>&gt;5.0 mmol/L</td>
<td>Nil</td>
</tr>
</tbody>
</table>

**Insulin**
- Continue long-acting and discontinue rapid / mixed insulins
- **Fixed rate insulin 0.1 units/kg/h** until pH >7.3, HCO\(_3\) >18mmol/L, capillary ketones <3 mmol/L
- Check trust DKA protocol for more details

**Bicarbonate supplementation (pH <7, SpR+)**
- 250-500ml 1.26% bicarbonate over 4 hour

**Hyperosmolar hyperglycaemic state**

**Tests**
- \(\Delta\) lab blood glucose (not capillary) >30mmol/L,
  - osmolality (2Na + glucose + urea) >320mOsm
- If venous pH <7.3, venous HCO\(_3\) <15, capillary ketones >3mmol/L or urine ketones 2+ → DKA
- U+E, FBC, trop T, ECG, CXR, MSU, cultures

**Initial treatment**
- IV fluids according to regimen
- Reduce osmolality by 5mOsm / kg / hour
- Once glucose no longer falling, start fixed rate IV insulin at 0.05 units / kg / hour
- Continue long-acting insulin but discontinue other diabetes medication

**Na and Osmolality**
- Reduce osm 3-8mOsm / kg / hour
- Reduce Na by 10mmol / 24hours
- For every 5.5 mmol/L reduction blood glucose, Na+ may rise 2.4mmol/L
- Only use 0.45% NaCl if osmolality fails to drop despite adequate fluid resus

**IV fluid regimen**

- 1L 0.9% NaCl 1 hour
- 1L 0.9% NaCl 2 hours
- 1L 0.9% NaCl 2-4 hours
- 1L 0.9% NaCl 4 hours
- 1L 0.9% NaCl 4-6 hours
- 10% dextrose 10 hours

**Other**

- Urinary catheter + 1hourly fluid balance
- Treat precipitating cause
- Prophylactic LMWH
- Assess pressure area

**Hypokalaemia**

**Severe (<2.5 mmol/L or symptomatic)**
- Cardiac monitor
- IV calcium gluconate 10% 10ml over 2 minutes (30 minutes if on digoxin. Repeat after 5 minutes if required)
- IV 10 units actrapid in 50ml of 50% glucose over 15 minutes. Repeat as necessary
- 20mg nebulised salbutamol if no IV access or resistant hyperkalaemia
- If venous HCO\(_3\) <20, sodium bicarbonate 0.5-1g QDS PO or 250ml 1.26% IV over 2 hours (if not overloaded or anuric)

**Hyperkalaemia**

**Severe (>6.5 mmol/L or symptomatic)**
- Cardiac monitor
- IV calcium gluconate 10% 10ml over 2 minutes (30 minutes if on digoxin. Repeat after 5 minutes if required)
- IV 10 units actrapid in 50ml of 50% glucose over 15 minutes. Repeat as necessary
- 20mg nebulised salbutamol if no IV access or resistant hyperkalaemia
- If venous HCO\(_3\) <20, sodium bicarbonate 0.5-1g QDS PO or 250ml 1.26% IV over 2 hours (if not overloaded or anuric)

**Status epilepticus**

- Lorazepam 2-4mg slow IV OR
- Buccal midazolam: 10mg (10+ years), 5mg (1-4 years), 2.5mg (6-12 months) OR
- Rectal diazepam 10mg
  
  **Repeat dose after 10 minutes**

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**Ward round checklist**
- Observations (including blood glucose)
- Fluid balance
- Drug chart (VTE, antibiotics)
- Results and scans