

Cyanide

Cyanide is produced in a local factory and may also contaminate ships' cargoes etc. Cyanide poisoning presents with agitation, headache, coma, pulmonary oedema, arrhythmias and shock. There is no time to lose. Use the Cyanide treatment kit that is kept in resuscitation, starting with inhaled amyl nitrate to buy a few extra moments – Get senior help AT ONCE. Consider in cardiac arrest following smoke inhalation.

An exhaustive list of poisons management is beyond the scope of this book – this is available to you on Toxbase (www.toxbase.org)

IMMEDIATELY LIFE-THREATENING POISONS

Life-threatening Ecstasy Poisoning presents with hyperpyrexia(>39) and collapse. Be vigilant about this diagnosis – there will often be muscle rigidity and hyper-reflexia as well. Get Consultant/senior anaesthetic help immediately. Start vigorous cooling measures immediately.

DIABETIC PATIENTS

1. DKA and HONK

- *These notes are from the Trust Adult DKA and HONK protocol - use the Intranet and follow the TRUST PROTOCOL (this is a treatment pathway and prescription)*
- *Patients under 18 years MUST be treated using the Paediatric DKA guidelines*

Diagnostic Criteria

Diabetic Ketoacidosis	Hyperosmolar non-ketotic state
<ul style="list-style-type: none"> • Venous bicarbonate <15 mmol/L * (bicarbonate can be requested on U&E form) • Urine ketones ++ or more <p>* measure arterial blood gasses if patient has reduced conscious level or respiratory distress.</p>	<ul style="list-style-type: none"> • Serum osmolality >350 mosmol (2 [sodium+potassium] + blood glucose) • Venous bicarbonate >15 mmol/L • Urine ketones + or less

Early management – intravenous infusion fluids / potassium / insulin**Infusion fluids (prescribe on fluid balance chart)**

- Give 1 litre sodium chloride 0.9% immediately during the first hour.
- If hypotension does not respond to sodium chloride 0.9%, give a plasma expander.
- Rate of fluids thereafter depends on age / fitness / dehydration of patient, consider central venous pressure line,
Rate typically: 1 litre over next hour
 2 litres over next 2-4 hours
 then 1 litre 4-6 hourly
- Reduce rate in elderly/cardiac disease/mild DKA (bicarbonate >10). More rapid infusion increases risk of pulmonary oedema.
- Switch to glucose 5% 1 litre 8 hourly once blood glucose <15 mmol/L. Continue simultaneous sodium chloride 0.9% if still volume depleted.
- If serum sodium rises above 155 mmol/L, switch to sodium chloride 0.45% (of glucose 5% if blood glucose <15).

Potassium (prescribe on fluid balance chart)

- Serum potassium is often normal or high initially but total body potassium is low.
- Anticipate fall in potassium and replace by switching infusion fluid to a potassium containing infusion, once first plasma potassium result is known.
- Administer potassium containing infusion as follows:
 - Serum potassium >5.5mmol/L: no additional potassium required, check in 2 hours
 - Serum potassium 4-4.5mmol/L: 20mmol potassium in each litre of infusion fluid
 - Serum potassium <4mmol/L: 40mmol potassium in each litre of infusion fluid

Insulin

- Insulin must be referenced on the main Kardex by prescribing Actrapid infusion 'as per chart'.
- Commence soluble insulin infusion (50 units/50 ml) via syringe driver, starting at 6 units/hour.
- Measure capillary blood glucose hourly using blood glucose meter. Once glucose <16, adjust insulin infusion rate according to algorithm overleaf.
- Check laboratory venous blood glucose result at 2 hours. If blood glucose has not fallen, check pump working and intravenous connections secure, then increase insulin infusion to 10 units/hour. Discontinue previous column and prescribe alternative algorithm.

Other measures

- Consider urinary catheter if no urine passed after 2 hours or incontinent.
- Consider nasogastric tube and aspiration if patient not responded to commands (NDB protect airway, discuss with ICU).
- Prescribe thromboprophylaxis on Kardex unless contraindicated.
- Screen for infection and other precipitating factors.
- Continue intravenous insulin and fluids until acidosis reversed and patient ready to eat and drink. Discontinue intravenous insulin and then re-start subcutaneous insulin according to guidelines.
- Long acting analogue insulin should not be omitted.

Intravenous bicarbonate

- In most cases administration of intravenous bicarbonate is not helpful and is potentially dangerous.
- Only consider if pH <6.9 and poor response to fluid resuscitation; refer to ICU.

Intravenous insulin infusion

Capillary blood glucose (mmol/L)	Standard insulin infusion rate (units/hr)
>16	6
12.1 – 16	4
10.1 – 12	3
7.1 – 10	2
4 – 7	1
<4	0.5

Administration and monitoring record

- Start recording at the start time of the infusion. Protocol chart is valid from 9am until 9am the following day.
- Measure capillary blood glucose every hour. Capillary blood glucose results must also be recorded on the observation chart.
- Measure U&E, pH and venous bicarbonate at 2 hours, then 2-4 hourly until bicarbonate >15

Don't forget that DKA may present as a hyperventilation attack or abdominal pain in adults or children with no history of Diabetes.

2. Hyperglycaemia without impaired consciousness

Patients (either newly or previously diagnosed DM) who present with hyperglycaemia +/- symptoms but with normal level of consciousness and no acidosis do not have DKA or HONK! They do not require admission unless

there is an intercurrent illness or some specific problem with diabetic control. They should be booked into next diabetic clinic (within one week). Review and manage their insulin therapy before discharge – seek help if necessary.

3. Hypoglycaemia

Nowadays most cases come by ambulance and will have received im Glucagon that usually works within 15 mins (if you are sending bloods tell lab that Glucagon has been given!). If the patient presents in coma/unable to take glucose by mouth give 50mls of 50% dextrose (5ml/kg of 10% dextrose for children). Can be discharged if able to eat and social support. Consider cause and give advice or review and manage their insulin therapy.

Special pitfalls for diabetic patients

- All diabetic patients with foot wounds or minor sepsis must be reviewed at treatment room or ARC. High risk of osteomyelitis. Consider immediate / early referral to podiatrist.
- Remember silent myocardial infarction – check ECG in diabetic patients with non-specific illness
- All diabetic patients with acute abdominal pain should be admit