PC332
Updated
July 2005

Adult Diabetic Emergency Guidelines and Treatment

ADDRESSOGRAPH LABEL

This chart is designed so that prescription and relevant observations can be recorded together.
Doctor: All prescriptions for insulin and fluids must be signed.
Nurse: All entries must be signed.

Ward: **Consultant:** **Date:**

DIAGNOSTIC CRITERIA

Diabetic Ketoacidosis (DKA)	**Hyperosmolar non-ketotic coma**
Venous bicarbonate <15mmol/l* Ketonuria ++ more *measure arterial blood gases only if patient has reduced conscious level or respiratory distress	Serum osmolality >350 mosmoles (2 [sodium + potassium] + blood glucose) Venous bicarbonate >15mmol/l Urine ketones ++ or less

INITIAL RESULTS

Blood glucose (BG) . . . . . pH . . . . . Sodium . . . . . Serum osmolality (Calculated) . . . . . .

Venous bicarbonate . . . . . pO_2 . . . . . Potassium . . . . . .

Urinary ketones . . . . . pCO_2 . . . . . Creatinine . . . . . .

EARLY MANAGEMENT - Fluids / potassium / insulin

Intravenous fluid	● Give 1 Litre normal saline (0.9% sodium chloride) immediately during the first hour ● If hypotension does not respond to saline, give a plasma expander ● Rate of fluids thereafter depends on age/fitness/dehydration of patient, consider central venous pressure line Typically - 1 litre over next hour - 2 litres over next 2-4 hours - then 1 litre 4-6 hourly ● Reduce in elderly/cardiac disease/mild DKA (bicarbonate >10). More rapid infusion increases risk of respiratory distress syndrome ● Switch to 5% glucose 1 litre 8 hourly once blood glucose <15mmol/l: Continue simultaneous normal saline if still volume deplete ● If serum sodium rises above 155mmol/l switch to glucose/saline (or glucose 5% if blood glucose <15)
Potassium	● Serum potassium is often normal or high initially but total body potassium is low ● Anticipate fall in potassium and replace, once first plasma potassium known
Insulin	● Add 50 units of soluble insulin to 50ml 0.9% sodium chloride in a syringe ● Infuse intravenous fluid using syringe driver starting at 6 units/hour; give Actrapid 10 units intramuscular if delay in starting intravenous insulin ● Check venous glucose (laboratory) at 2 hour. If blood glucose has not fallen check pump working and intravenous connections, then increase insulin to 10 units/hour ● Measure blood glucose hourly using blood glucose meter ● Once glucose falling, adjust insulin infusion rate according to sliding scale
Other measures	● Consider urinary catheter if no urine passed after 2 hours or incontinent ● Consider naso-gastric tube and aspiration if patient does not respond to commands, (NB protect airway) ● Consider thromboprophylaxis in elderly or high risk patients unless contraindicated ● Screen for infection and give antibiotics if clinical evidence of infection (white cell count may be markedly raised from DKA alone) ● Continue intravenous insulin and fluids acidosis reversed and patient ready to eat and drink ● Discontinue sliding scale once subcutaneous insulin given
Bicarbonate	● In most cases is not helpful and is potentially dangerous ● Only consider if pH <6.9 and poor response to fluid resuscitation; discuss first with consultant

INTRAVENOUS FLUID (via infusion pump)

PRESCRIPTION						ADMINISTRATION				
Date	Name of parenteral fluid	Volume	Additives*	Duration	Signature	Batch number	Start time	Signature	Finish time	Signature

*Add potassium chloride as follows:

Serum potassium (mmol/l)	
>5.5	None and check in 2 hours
4 - 5.4	20mmol to each litre
<4	40mmol to each litre

INTRAVENOUS INSULIN INFUSION
Add 50 units soluble insulin to 50ml 0.9% sodium chloride in a syringe.
Use new column (delete previous prescription) each time insulin prescription is changed.

PRESCRIPTION				ADMINISTRATION				
Blood glucose mmol/l	Insulin units/hour	Insulin units/hour	Insulin units/hour	Batch number	Start time	Signature	Finish time	Signature
>16	6							
12.1 - 16	4							
10.1 - 12	3							
7.1 - 10	2							
4 - 7	1							
<4	0							
Signature								
Bleep number								
Date								
Time								

OBSERVATIONS												
SYRINGE DRIVER CONTROLLED INSULIN INFUSION (record hourly)							**RESULTS** Check creatine, electrolyte and venous bicarbonate at 2 hours then 2-4 hourly until bicarbonate >15				
Date and time	Meter blood glucose mmol/l	Rate units/ hour	Volume left in syringe (ml)	Volume infused in one hour (ml)	Total volume infused (ml)	Signature	Sodium	Potassium	Creatine	Bicarbonate	Lab glucose

OBSERVATIONS												
SYRINGE DRIVER CONTROLLED INSULIN INFUSION (record hourly)							**RESULTS** Check creatine, electrolyte and venous bicarbonate at 2 hours then 2-4 hourly until bicarbonate >15				
Date and time	Meter blood glucose mmol/l	Rate units/ hour	Volume left in syringe (ml)	Volume infused in one hour (ml)	Total volume infused (ml)	Signature	Sodium	Potassium	Creatine	Bicarbonate	Lab glucose