

Diabetic ketoacidosis care pathway 1

Time of Arrival: _____
 Location: _____
 Date: _____

NAME: *Affix label*

0-4 hours Emergency Management

Ideally patients with DKA should be managed in a MHDU setting

Aim: To improve the acute management of diabetic ketoacidosis in adults aged 16 years and over within the first 4 hours of presentation (for paediatric management go to www.bsped.org.uk)

Definition: Severe uncontrolled diabetes with: a) ketonaemia/ketonuria b) metabolic acidosis c) usually with hyperglycaemia

Severe DKA = pH <7.1 or HCO₃ <5mmol/L or H⁺ > 80mEq/L

Consultant/Senior physician should be called immediately if:

- Cerebral Oedema
- Severe DKA
- Hypokalaemia on admission
- Reduced conscious level

1. Immediate actions

Confirm diagnosis H ⁺ > 45 or HCO ₃ < 18 or pH < 7.3 on venous gases	
Check U&Es and laboratory Blood Glucose	
Check urine or blood ketones	
Confirm patient ≥ 16 years	
Record time of arrival	

2. Management 0-60 mins

Commence iv 1L Sodium Chloride 0.9% over 1 hour within 30 mins of admission	
Time and sign fluid commencement (on reverse)	
Commence soluble insulin IV 6 units/hour within 30 mins of admission	
Time and sign start of insulin (on reverse)	
Record SEWS/MEWS/SIRS score	

Other interventions to be considered (tick box if performed)

Review ECG or cardiac monitor	<input type="checkbox"/>	Blood cultures	<input type="checkbox"/>
Record GCS score	<input type="checkbox"/>	Central line	<input type="checkbox"/>
Insert catheter if oliguric	<input type="checkbox"/>	Chest Xray	<input type="checkbox"/>
MSSU	<input type="checkbox"/>	DVT prophylaxis	<input type="checkbox"/>
If protracted vomiting insert NG tube	<input type="checkbox"/>	If deteriorating, consultant or senior physician called	<input type="checkbox"/>

3. Ongoing Management 1-4 hours

Record: SEWS/MEWS/SIRS	<input type="text"/>	ECG	<input type="text"/>	GCS	<input type="text"/>			
Time and sign ongoing Sodium Chloride 0.9% replacement (on reverse)								
1L Sodium Chloride 0.9% hour 2 + KCL								
500mls/hour for hours 3-4 + KCL								
Review K ⁺ result – admission or most recent result								
Prescribe KCl in 500 ml Sodium Chloride 0.9% bag as:								
None if anuric or K ⁺ > 5 mmol/L								
10 mmol if level 3.5-5 mmol/L								
20 mmol if level <3.5 mmol/L								
(tick box if measured)								
Check finger prick Blood Glucose hourly	1hr	<input type="text"/>	2hrs	<input type="text"/>	3hrs	<input type="text"/>	4hrs	<input type="text"/>
Lab Glucose, U&Es and HC03 at:	2hrs		<input type="text"/>	4hrs		<input type="text"/>		

If Blood Glucose falls to ≤ 14 mol/L in first 4 hours

Commence Glucose 10% 500mls with 20 mmol KCl at 100ml/hour	
Continue Sodium Chloride 0.9% at 400mls/hour + KCL (as per K ⁺ table above) until end of hour 4	
Reduce insulin to 3 units/hour	
Maintain Blood Glucose >9 mmol/L and ≤14 mmol/L adjusting insulin rate as necessary	
If Blood Glucose <9mmol/L adjust insulin to maintain level >9mmol/L and <14mmol/L	
If Blood Glucose >14mmol/L see supplementary note	
Progress on to second DKA Care Bundle “4 hours to discharge”	

Fluid (potassium) prescription sheet

	DATE	FLUID POTASSIUM	Vol (ml) Dose (mmol)	Duration	Signature	Serial No Batch No	Time begun	Given by
A		Sodium Chloride 0.9%	500ml	30mins				
B		Sodium Chloride 0.9%	500ml	30mins				
C		Sodium Chloride 0.9%	500ml	30mins				
D		Sodium Chloride 0.9%	500ml	30mins				
E		Sodium Chloride 0.9%	500ml	60mins				
F		Sodium Chloride 0.9%	500ml	60mins				
G								
H								

Once Blood Glucose <14mmol start Glucose 10% in addition to Sodium Chloride 0.9%

I		Glucose 10%	500ml	5 hours				
		KCL 20 mmol						
J		Glucose 10%	500ml	5 hours				
		KCL 20 mmol						
K								

Intravenous Insulin Prescription

DATE TIME	INSULIN RATE (units/hr)	TYPE OF INSULIN	SIGNATURE	GIVEN BY
	6units/hour when Blood Glucose >14 mmol/L			
	3units/hour when Blood Glucose ≤14 mmol/L			

Supplementary notes

1. Guidance on bicarbonate

Do not use bicarbonate.

2. Potassium Replacement

KCL should not normally be administered at a rate of greater than 20mmol/hour

3. WBC Count

The WBC count is often raised in DKA and antibiotics should only be administered if there is clear evidence of infection.

4. Blood Glucose >14 mmol/L

If Blood Glucose rises >14mmol/L do not stop glucose, adjust insulin to maintain level between 9 and 14 mmol/L

5. Signs of Cerebral Oedema

Children and adolescents are at the highest risk of cerebral oedema. Consider if:

- Headaches
- Reduced conscious level.
- Monitoring for signs of cerebral oedema should start from the time of admission and should continue until up to at least 12

hours after admission

- Administer IV mannitol (100mls of 20% over 20 minutes) or dexamethasone 8mg (discuss with Consultant)
 - Undertake CT scan to confirm findings;
 - Consider ITU (check arterial blood gases)
 - If there is a suspicion of cerebral oedema or the patient is not improving as expected /within 4 hours of admission, call Consultant.
- 6. Laboratory Blood Glucose Testing**
It is reasonable to use a point-of-care blood glucose meter to monitor blood glucose level if the previous laboratory blood glucose value is less than 20 mmol/L .
- 7. Insulin Management**
Insulin should be prescribed, beginning at 6 units/hour. Rate will generally be reduced with time depending on clinical circumstances, presence of long acting insulin and to avoid a fall of >5mmol/L per hour as rapid falls in Blood Glucose may be associated with cerebral oedema.

Do not stop glucose once started