Hyperosmolar Hyperglycaemic State (HHS) SUMMARY CLINICAL GUIDELINE

SEEK SENIOR REIVEW OR DIABETES TEAM INVOLVEMENT IF NOT IMPROVING

THE DIAGNOSTIC CRITERIA FOR HHS CAN BE DEFINED AS THE PRESENCE OF ALL OF THE FOLLOWING:

- 1) High osmolality, often 320 mosmol/kg or more
- 2) High capillary blood glucose (CBG), usually 30mmol/L or more
- Severely dehydrated and unwell 3)

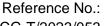
If pH < 7.3 or ketones > 3mmol/L or urine ketones 2+ or more or venous HCO3⁻<15mmol/L FOLLOW DKA GUIDELINE

Potassium chloride (KCl)

IMMEDIATE ACTIONS

- ABC assessment including all routine observations including GCS,
- Capillary blood glucose check and capillary ketone check
- Obtain urgent IV access and commence fluids (as per Box A action 2)
- Venous bloods obtained for U&E, bicarbonate, FBC and venous blood gas, blood cultures.
- Urinalysis for ketones (if capillary ketones not available)
- VTE prophylaxis unless contraindicated .
- Calculate osmolality (2Na + glucose + urea)

IV FLUIDS





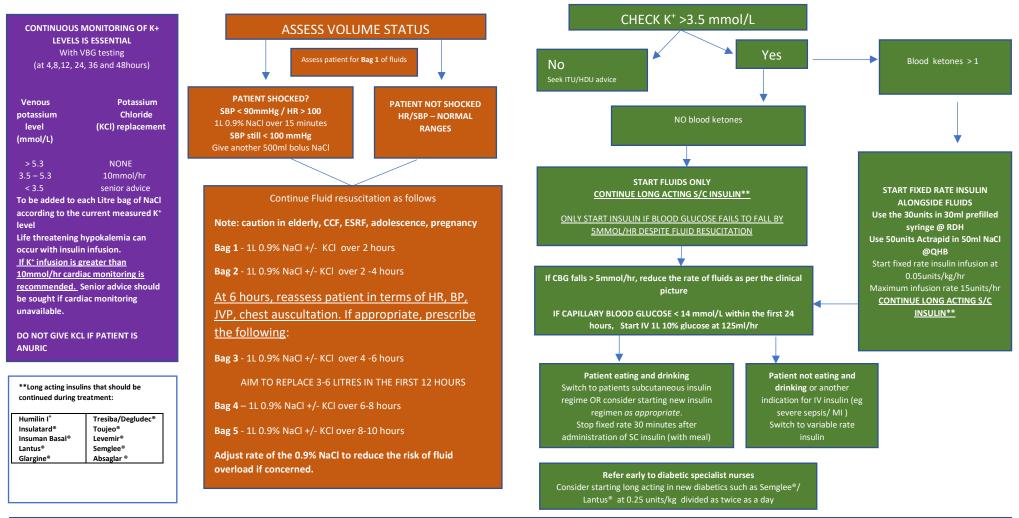
University Hospitals of Derby and Burton NHS Foundation Trust

SEVERE HHS - NEEDS DISCUSSION WITH HDU/ICU

- Osmolality greater than 350mosmol/kg
- Sodium above 160mmol/L
- Venous/arterial pH below 7.1
- Hypokalaemia (<3.5mmol/L) or hyperkalaemia (>6mmol/L)
- GCS < 12 or abnormal AVPU
- SpO₂ < 92%

INSULIN

- Urine output < 0.5ml/kg/hr
- Serum creatinine > 200µmol/L
 - Hypothermia
- Macrovascular events such as MI or stroke
- SBP < 90. pulse > 100/<60



CG-T/2023/053

MONITORING	AIMS	EXIT CRITERIA
Monitoring should be performed as follows: Osmolality – 4, 8, 12, 24, 36, 48 hours to monitor improvement CBG/blood glucose – Hourly Fluid balance – Hourly NEWS – Hourly VBG (venous) – 4, 8, 12, 24, 36, 48 hours U&E – 4, 8, 12, 24, 36, 48 hours	 TARGETS Aim to reduce osmolality by 3-8 mosmol/kg/hr Aim to reduce CBG by 5mmol per hour Aim to reduce sodium by 10mmol/24hr Only consider using 0.45% sodium chloride if osmolality fails to drop WITH SPECIALIST INPUT If numbers are not improving check the patency of lines and infusion pumps before considering increasing FRII 	 RESOLUTION OF HHS Resolution Of hyperglycaemia Resolution of hyperosmolar state If patient eating and drinking – restart normal diabetes medication. Insulin should be considered if not already on it Triage to the diabetes ward