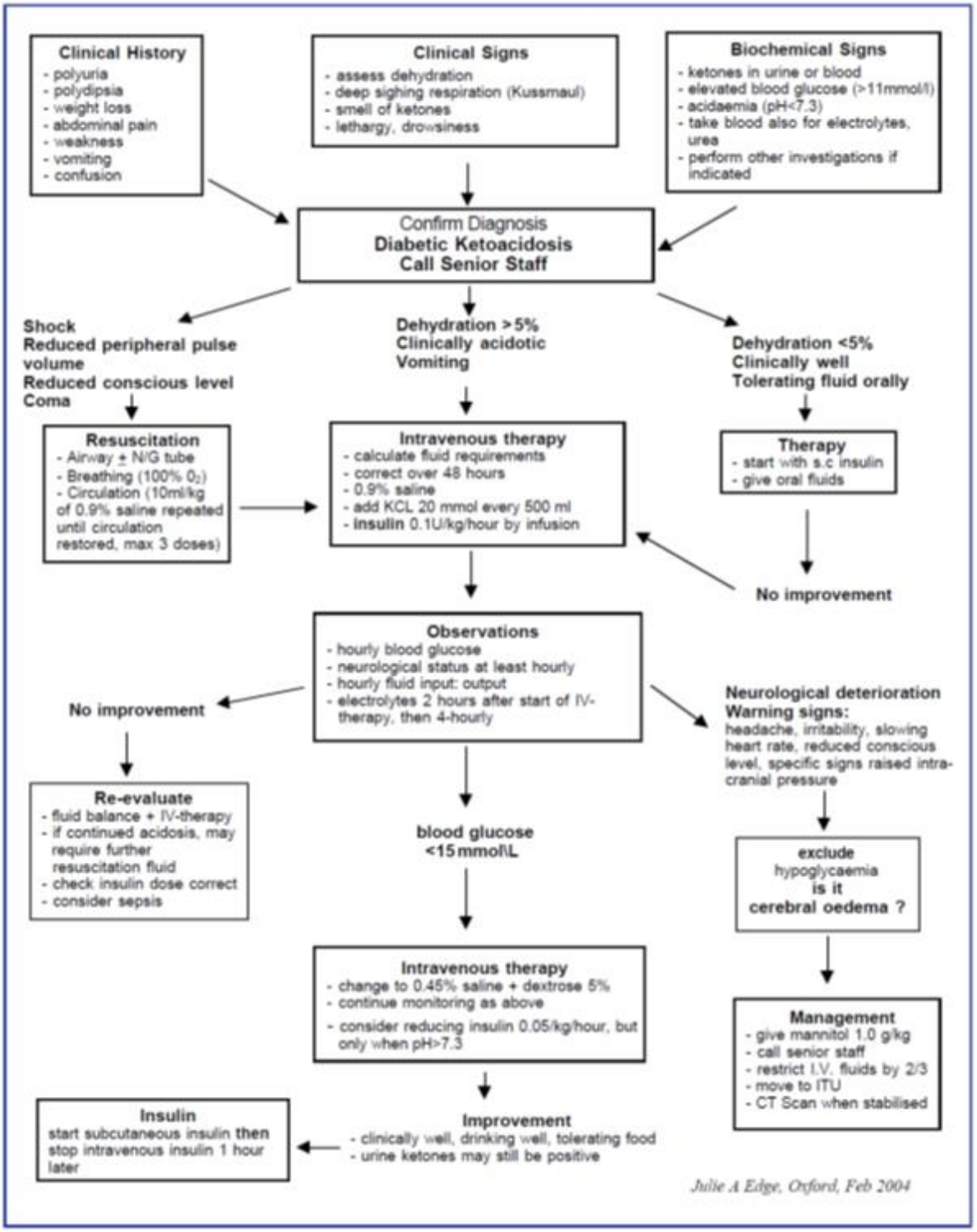
Clinical History
- polyuria
- polydipsia
- weight loss
- abdominal pain
- weakness
- vomiting
- confusion
Clinical Signs
- assess dehydration
- deep sighing respiration (Kussmaul)
- smell of ketones
- lethargy, drowsiness
Biochemical Signs
- ketones in urine or blood
- elevated blood glucose (>11mmol/l)
- acidaemia (pH<7.3)
- take blood also for electrolytes, urea
- perform other investigations if indicated
Confirm Diagnosis
Diabetic Ketoacidosis
Call Senior Staff
Shock
Reduced peripheral pulse volume
Reduced conscious level
Coma
Dehydration >5%
Clinically acidotic
Vomiting
Dehydration <5%
Clinically well
Tolerating fluid orally
Resuscitation
- Airway ± N/G tube
- Breathing (100% O2)
- Circulation (10ml/kg of 0.9% saline repeated until circulation restored, max 3 doses)
Intravenous therapy
- calculate fluid requirements
- correct over 48 hours
- 0.9% saline
- add KCL 20 mmol every 500 ml
- insulin 0.1U/kg/hour by infusion
Therapy
- start with s.c insulin
- give oral fluids
No improvement
Observations
- hourly blood glucose
- neurological status at least hourly
- hourly fluid input: output
- electrolytes 2 hours after start of IV-therapy, then 4-hourly
No improvement
Re-evaluate
- fluid balance + IV-therapy
- if continued acidosis, may require further resuscitation fluid
- check insulin dose correct
- consider sepsis
blood glucose <15 mmol/L
Neurological deterioration
Warning signs:
headache, irritability, slowing heart rate, reduced conscious level, specific signs raised intra-cranial pressure
exclude hypoglycaemia
is it cerebral oedema ?
Management
- give mannitol 1.0 g/kg
- call senior staff
- restrict I.V. fluids by 2/3
- move to ITU
- CT Scan when stabilised
Intravenous therapy
- change to 0.45% saline + dextrose 5%
- continue monitoring as above
- consider reducing insulin 0.05/kg/hour, but only when pH>7.3
Improvement
- clinically well, drinking well, tolerating food
- urine ketones may still be positive
Insulin
start subcutaneous insulin then stop intravenous insulin 1 hour later
Julie A Edge, Oxford, Feb 2004