CRUMPET Scenario 1 : Status Epilepticus

Learning Objectives :

Technical Skills

- Knowledge of Management of Status epilepticus in a child
- Knowledge of drug doses and routes of administration

Non Technical Skills

- Effective team working, leadership and communication
- Effective handovers as new staff / specialities arrive
- Appropriate communication with parents

EM Curriculum Mapping :

- PMP6 The unconscious child
- PAP7 Dehydration secondary to diarrhoea and vomiting

Faculty Roles / Responsibilities : [Minimum Faculty = 4]

Simulation Room :

Parent Information in script

Student nurse (with microphone)

- Expert in equipment,
- Limited clinical experience.
- Able to undertake observations if asked.
- Only proactive if needs to be.
- Guided by control room.

Control Room:

Phone faculty

Switchboard : helpful and cheerful. Will contact whoever via bleep / mobile phone

Laboratory : Lab technician will answer phone and take request for urgent bloods. Needs patients name and DOB. Results will be phoned back

Consultants (ED / Anaesthesia / Paediatrics) – at home on call. Will give advice as needed and will come in to hospital immediately if asked with a timeframe 15-20 minutes

Senior Nurse - present in the department - available for advice over the phone if needed

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Candidates :

1 ED ST 1/2	2 ED Nurses
1 ED ST4+	
1 Anaesthesia ST 1/2	1 Operating Department Practitioner (ODP)
1 Anaesthesia ST3+	
1 Paediatric ST 1/2	1 Paediatric Nurse (optional)
1 Paediatric ST 3+	

Mannikin Preparation :

Baby Simulator (eg) SIM Baby in a cot / ED trolley
Clothed
No iv access

Sim Room set up :

ED Paediatric Resus bay. Full monitoring available.
All drugs / fluids available (see props list for course)
Ambulance sheet
Observation chart
ED drug chart
Algorithms for management of Paed Emergencies

Scenario Background :

James Smith

James is 11 months old and normally fit and healthy. He has had diarrhoea and vomiting for the past week. The vomiting settled after 3 days, but the diarrhoea has persisted up to ten times daily. There has been no blood in the diarrhoea. He has seen his GP 3 times during the course of the illness including yesterday. He has been tired and weak, but generally coping reasonably well and tolerating oral fluids, but not the Dioralyte prescribed by his GP.

This evening he seemed more tired, and then seemed to be staring strangely when he went to bed. He had not responded much when his parents put him to bed, but they put this down to tiredness. They were woken by noises from his bedroom, and found him unresponsive and jerking intermittently. They called 999 immediately.

Scenario start :

Candidates in simulation room :

1 ED ST 1/2 2 ED Nurses
1 ED ST4+

On arrival (technical programming)

A : maintained spontaneously. Not needing airway (crying intermittently)
B : RR 40. Air entry equal, chest clear. SpO_2 100% on Oxygen
C : Pulse 148, CRT < 2 sec, BP 82/38
D : A V **P** U, PERL3mm, not fitting
E: No rash, no sign of trauma

Expected Responses during the scenario :

Calculations (Weight = 10kg)
IV access. BM (8.7)
FBC, UE, glucose, CRP, Ca, Mg, blood cultures
Maintenance or fluid bolus 20ml/kg (=200ml)
Ceftriaxone 80mg/kg (=800mg)
Obtain complete history from parents

Progression of Scenario and treatments required :

Before IV access is successfully gained, James starts fitting

- Diazepam 0.5 mg/kg PR (=5mg) (Alternative: midazolam 0.5ml/kg buccal)

Fitting stops allowing IV access to be obtained, but starts again soon after.

- Lorazepam 0.1mg/kg iv (=1mg)

If multiple doses of benzodiazepines given in short succession (ie less than 10 minutes):

- RESPIRATORY ARREST

Again fitting stops briefly, but begins again.

- Paraldehyde 0.4ml/kg PR (0.8ml/kg prepared solution) (=4ml paraldehyde + 4ml olive oil) *as per local guideline*

The fitting continues intermittently.

- Phenytoin 20mg/kg (=200mg) over 30mins with ECG and BP monitoring
(in 50-100ml N Saline)

The baby will then desaturate (85%) after Phenytoin infusion commences despite airway manoevres and thus will require intubation and ventilation

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Expected Additional Measures :

Call paediatric ST3+ when patient not settling with benzodiazepines

Call anaesthetist around time of needing to infuse phenytoin, to allow them time to prepare

ABG

Chase up U&E result (?hyponatraemia).

Bolus N Saline (0.9%) if not already done as treatment for dehydration and presumed hyponatraemia

Arrange CT head

Appropriate explanation to parents

Discuss case with PICU / Paediatric Retrieval Team

Outcome

James goes on to need RSI. He has a normal CT head and is transferred to PICU. Stool culture reveals E. Coli 0157. He requires dialysis for several days. Public Health enquiries reveal that he had visited a farm a week earlier.

Briefing Sheet

Scenario start :

Candidates in simulation room :

1 ED ST 1/2 2 ED Nurse
1 ED ST4+

Initial Briefing Notes to ED Team (to be read out)

James is 11 months old and normally fit and healthy. He has had diarrhoea and vomiting for the past week.

He has seen his GP 3 times during the course of the illness including yesterday. He has been tired and weak, but generally coping reasonably well and tolerating oral fluids

He had not responded much when his parents put him to bed, but they put this down to tiredness. They were woken by noises from his bedroom, and found him unresponsive and jerking intermittently. They called 999 immediately.

Briefing Sheet

Parent / Grand parent

James is your son / grandson. He is normally very well. He has had diarrhoea and vomiting for the past week. The vomiting settled after 3 days, but the diarrhoea has persisted up to ten times daily. There has been no blood in the diarrhoea.

He has seen his GP 3 times during the course of the illness including yesterday. He has been tired and weak, but generally coping reasonably well and tolerating oral fluids, but not the Dioralyte prescribed by his GP.

Blood Results :

U&E

James Smith	
Na	111
K	4.7
Urea	15.1
Creatinine	236

Venous BG

James Smith	
pH	7.29
PO2	5.2
PCO2	5.8
BE	-3.5

FBC

James Smith	
Hb	12.8
WCC	9.8
PLT	300

Other Tests :

CRP 159

Mg^{2+} 0.82

Glucose 8.7

Calcium 2.1

CXR : Not done in the scenario