

Adair, Jonathan

From: Russell, George
Sent: 09 June 2009 15:44
To: 'Fleming, David'
Subject: Hyponatraemia Wall chart for Children

Importance: High

David

Good afternoon.

At long last agreement has been reached by various clinicians and people within the DHSSPS on the logo for the Hyponatraemia Wall chart for Children.

DHSSPS Logo **PARENTERAL FLUID THERAPY for CHILDREN AGED OVER 4 WEEKS and UNDER 16 YEARS** Sept 2007

Initial management guideline
Amended June 2009

David I would be grateful if it could be set in the following way.

The main title has been emboldened .

Followed underneath by **Initial management guideline**.

To the left of the title is to be placed Sept 2007, with Amended June 2009 underneath are to go the words Amended June 2009.

I have also included for guidance an attachment giving the original poster.

Many thanks for your help and happy to discuss.

George



HSC (SQSD)
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PARENTERAL FLUID THERAPY for CHILDREN and YOUNG PERSONS AGED OVER 4 WEEKS and UNDER 16 YEARS

Initial management guideline

Monitoring & observations essential

ALL CHILDREN

Admission Weight. U&E (unless child is well & for elective surgery)

12 Hourly –

Assess In / Output, plasma glucose

Daily – Clinical reassessment.

U&E (more often if abnormal); 4–6 hourly if $\text{Na}^+ < 130 \text{ mmol/L}$.

ILL CHILDREN

May need:

Hourly – HR, RR, BP, GCS. Fluid In/

Output (urine osmolality if volume cannot be assessed)

2–4 hourly – glucose, U&E, +/- blood gas.

Daily – weight if possible

Each shift

Handover and review of fluid management plan.

If plasma $\text{Na}^+ < 130 \text{ mmol/L}$ or $> 160 \text{ mmol/L}$ or plasma Na^+ changes $> 5 \text{ mmol/L}$ in 24 hours ask for senior advice

Is shock present?

YES

NO

DKA / burns: initiate departmental protocol. Renal / cardiac / hepatic – get senior advice.

Is there a fluid deficit?

YES

NO

Prescribe Maintenance fluids

CALCULATION OF 100% MAINTENANCE RATE

- (a) for first 10 kg: 100 ml/kg/ day = 4ml/kg/hr
- (b) for second 10 kg: 50 ml/kg/ day = 2ml/kg/hr
- (c) for each kg over 20 kg: 20 ml/kg/ day = 1ml/kg/hr
- [for 100% daily maintenance add together (a) + (b) + (c)]

MAXIMUM: in females 80 mls per hour; in males 100 mls per hour
If risk of hyponatraemia is high consider initially reducing maintenance volume to two thirds of maintenance

ADMINISTER RAPID FLUID BOLUS

Give 20 ml/kg sodium chloride 0.9% IV or Intraosseous
[10 ml/kg if history of haemorrhage or in diabetic ketoacidosis]
Reassess. Repeat bolus if needed. Call for senior help.

(Up to 60 ml/kg may be needed. Use blood after 40 ml/kg if patient has haemorrhaged)

Can child be managed with oral fluids?

YES

PRESCRIBE ORAL REHYDRATION SOLUTION

ESTIMATE DEFICIT

FLUID DEFICIT = (% dehydration x kg x 10) as mls of:
sodium chloride 0.9%

The volume of fluid to be prescribed is: fluid deficit MINUS volume of any fluid bolus received

Prescribe this residual volume of deficit separately from the maintenance prescription.

Give over 24 hours (but over 48 hours if $\text{Na}^+ < 135$ or $> 145 \text{ mmol/L}$)

ONGOING LOSSES: calculate at least 4 hourly. Replace with an equal volume of:
sodium chloride 0.9% (with or without pre-added potassium)

Be prepared to change fluid type and volume according to clinical reassessment, electrolyte losses and test results

PRESCRIBE INITIAL IV MAINTENANCE FLUID AND TIME FOR REASSESSMENT

Patients particularly at risk of hyponatraemic complications:

peri-operative patients; patients with head injuries; gastric losses; CNS infection; severe sepsis; hypotension; intravascular volume depletion; gastroenteritis with dehydration; abnormal plasma sodium, particularly if less than 138 mmol/L but also when greater than 160 mmol/L; salt wasting syndromes.

Fluid choices: glucose containing fluid normally required if under 1 year old and may also be required by older children

sodium chloride 0.9% (with/ without pre-added glucose 5%)

or
Hartmann's Solution

or
Solution Corporately Approved at Trust Level

Other Patients:
sodium chloride 0.45% with pre-added glucose 2.5% or 5%

All Patients:

sodium chloride 0.9% (with/ without pre-added glucose 5%)

All Patients:

Alter fluid rate according to clinical assessment. Change electrolyte and glucose content of infusion fluid according to test results.

COMMENCE ORAL FLUIDS & DISCONTINUE IV FLUIDS AS SOON AS POSSIBLE

Hypokalaemia ($< 3.5 \text{ mmol/L}$): Check for initial deficit. Maintenance up to 40 mmol/L IV potassium usually needed after 24 hrs using pre-prepared potassium infusions as far as possible. Consult Trust Policy on IV strong potassium.

Oral intake and Medications: volumes of intake, medications & drug infusions must be considered in the fluid prescription.

Hypoglycaemia ($< 3 \text{ mmol/L}$). **Medical Emergency: give 5 ml/kg bolus of glucose 10%.** Review maintenance fluid, consult with senior and recheck level after 15–30 mins. **INTRA-OPERATIVE PATIENTS:** consider monitoring plasma glucose.

Symptomatic Hyponatraemia: check U&E if patient develops nausea, vomiting, headache, irritability, altered level of consciousness, seizures or apnoea. **This is a Medical Emergency and must be corrected.**

Commence infusion of sodium chloride 2.7% at 2 ml/kg/hour initially and get senior advice immediately.