

Adair, Jonathan

From: Fleming, David [David.Fleming [REDACTED]]
Sent: 08 February 2010 14:42
To: Russell, George
Cc: mcaloonj [REDACTED]
Subject: TRIM: RE: TRIM DHSSPS Document : DH1/10/20980 : FW: Hyponatraemia Wall Chart for Children 05-02-2010.
Attachments: HSC (SQSD) 20-07 Wallchart (A3) Final Print Version-06 08.02.10.pdf

George,

Please find amended chart.

Any other changes, please do not hesitate to contact me.

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-----Original Message-----

From: Russell, George [[mailto:George.Russell@\[REDACTED\]](mailto:George.Russell@[REDACTED])]
Sent: 08 February 2010 14:03
To: Fleming, David
Cc: Moreland, Mary
Subject: TRIM DHSSPS Document : DH1/10/20980 : FW: Hyponatraemia Wall Chart for Children 05-02-2010.
Importance: High

David

I have e-mailed Dr Jarlath McAloon, a copy of the new Hyponatraemia Wall Chart for Children, which you kindly produced on Friday.

I had pointed out two errors that needed to be corrected and he has agreed that the wall chart go ahead with these corrections made.

- 1) In the section calculation of 100% MAINTENANCE RATE, there be a wider gap IN MALES 100 MLS PER HOUR, to keep the same spacing as in the female reference, as it would improve the appearance of the wall chart.
- 2) In the final box at the very bottom is the section which refers to IF PATIENT DEVELOPES NAUSEA. The word DEVELOP is spelt as DEVELOPES. Dr Mcaloon has confirmed that there is no medical reason why it should not be spelt as DEVELOPS. Would you please change this on the wall chart.

(David you will be heartened to know that the mis-spelling of the word develop was on the first wall chart and displayed on many sites and to my knowledge there has never been a complaint about the spelling).

David could you please make the two changes to the wall chart.

Thank you for all your work.

George

-----< TRIM Record Information >-----

Record Number : DH1/10/20980

Title : FW: Hyponatraemia Wall Chart for Children 05-02-2010.

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

Initial management guideline

Sept
2007

Amended February 2010

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

CALCULATION OF 100% MAINTENANCE RATE

(a) for first 10 kg: $100 \text{ ml/kg/day} \equiv 4 \text{ ml/kg/hr}$
(b) for second 10 kg: $50 \text{ ml/kg/day} \equiv 2 \text{ ml/kg/hr}$
(c) for each kg over 20 kg: $20 \text{ ml/kg/day} \equiv 1 \text{ ml/kg/hr}$
[for 100% daily maintenance add together (a) + (b) + (c)]

MAXIMUM: in females 80 mls per hour; in males 100 mls per hour. If the 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; bronchiolitis; 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:

Altered 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.