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Paediatric Shock Dehydration and Fluid Calculation

Practical 07 / Clinical or documentation case

Aim

Recognise poor perfusion and significant dehydration and check an authorised fluid calculation.

Principle

Perfusion depends on more than blood pressure. Altered mental state, pulses, capillary refill, urine output and trends help assess shock.

Materials and Requirements

- Fictional observation and weight chart, local emergency and dehydration pathways
- Calculator and simulated fluid monitoring sheet

Procedure

1. Assess airway and breathing, alert the team and check pulse quality, capillary refill, extremity warmth, blood pressure and responsiveness.
2. Record age-appropriate vital signs and the time of each assessment. Check pulses, extremity temperature and refill together with alertness and context, as blood pressure may be preserved initially.
3. Ask about fluid loss, intake and urine output. Assess eyes, mucosa and other dehydration signs using the approved child assessment.
4. Compare fluid intake, losses and urine output with the caregiver’s account and recorded weight. Use the approved signs and case definition to classify dehydration and mark uncertainty.

Continue with step 5 on the next page.

Procedure Continued

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5. Distinguish hypovolaemia from other possible causes of shock. Check the pathway for the presentation, including comorbidities that affect fluid choice.
6. Check for features prompting a different pathway, including malnutrition, cardiac concerns or suspected infection. Tell the supervisor the likely category and most urgent finding.
7. Verify the clinician-authorised fluid type, volume per kg, weight and duration for the fictional exercise. Multiply the ordered mL/kg by kg and record units.
8. Write the authorised order as volume per kg and multiply by the verified weight. If the task asks for a rate, check the total mL and ordered duration before dividing in the required units.
9. Plan reassessment after each intervention and report signs of improvement or fluid overload.
10. At each simulated reassessment record perfusion, breathing, urine output and possible overload. Report whether the response supports continuing, changing or escalating under clinician direction.

Precautions

- Use the instructor's case-specific order. Different shock states and medical conditions require different protocols.
- Do not delay escalation to complete calculations.

Observations and Interpretation

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Observations and Record

Item	What to record	What it tells you
Perfusion	Pulse, refill, mentation and BP trend	Detects circulatory compromise
Hydration	Losses, intake, urine and examination signs	Supports classification
Ordered volume	Authorised mL/kg, weight and calculated mL	Checks arithmetic and review plan

Worked Example

A 12 kg trainer case has loose stools, weak peripheral pulses and delayed refill. Its authorised exercise order is 10 mL/kg of the specified fluid. Calculation gives 120 mL.

Result and Interpretation

Escalate the shock signs. Verify the fictional order and document how perfusion, breathing and signs of overload will be reassessed.

Viva Questions and Answers

Can shock occur before blood pressure falls?

Yes. Compensatory physiology can preserve blood pressure early.

What units must cancel in the calculation?

Kilograms cancel in mL/kg multiplied by kg.

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