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Dopamine Infusion: A Simpler Formula

Dopamine, a potent sympathomimetic amine is the drug of choice in management of neonatal shock unresponsive to volume expanders, adrenaline and sodium bicarbonate administration. Since the drug has to be administered in continuous infusion, it is imperative to have a simple formula for dosage calculations. The American Heart Association (AHA) has provided the following formula, multiply 6 times the weight in kg times the desired dose in $\mu\text{g}/\text{kg}/\text{min}$, divided by the desired amount of fluid to infuse in ml/h which provides the amount of dopamine in mg to add to each 100 ml solution prepared.

This formula is not easy to remember as evidenced by a small survey in 50 pediatricians, of teaching hospitals in Delhi. The awareness regarding AHA formula was 100% but only 4 out of 50 could correctly reproduce it. Rest of the doctors were using their own improvised formulae. All agreed

that there was a need for simpler formula.

We derived a formula for calculating the dopamine to be infused to ml/hour. This also takes into account the concentration of dopamine available in marketed solution, *i.e.*, 1 ml containing 40 mg of dopamine so that there is no need of further calculations from mg to ml. The derived formula is ml of dopamine/hour = $0.0015 \times \text{wt (kg)} \times \text{dose } (\mu\text{g}/\text{kg}/\text{min})$.

The advantage of this formula lies in its simplicity, easy reproducibility, absence of any division factor involved at any stage, dosages being directly calculated in ml instead of meg or mg. One has to remember only one constant *i.e.*, 0.0015. The formula does not take into account the amount of fluid to be infused, thus also avoiding confusion and multiple calculations if two simultaneous drips are being set up.

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