Flushing Venous Catheters

Problem

Venous catheters should be flushed before giving an IV drug, in-between giving different IV drugs, and after administering an IV drug. Flushing a catheter before giving a drug ensures that the catheter is working correctly. Flushing in-between giving two different drugs will prevent incompatible drugs from mixing and precipitating.

Flushing after giving an IV drug makes sure that there is no drug left inside the catheter the next time it is used. This is especially important with central venous catheters, which can have a large dead space volume, and in children where a small bolus of residual drug is at greater risk of causing harm.

Consequence

A catheter not functioning properly and residual drugs in the catheter can result in ineffective administration of IV medication and/or adverse results. These can have consequences for the patient and for the responsible nurses. Nurses should never underestimate their responsibilities when preparing and administering IV medications.

Solution

Here are some suggested steps to take to prevent / avoid venous catheter problems.

- Flush the venous catheter with 0.9% sodium chloride (normal saline) or 5% dextrose.
- Check the drug information to ensure that the drugs being administered are compatible for the flush solution.
- Peripheral IV cannulae need a flush volume of 5-10 ml, whereas central venous catheters require larger flush volumes (e.g., 20 ml).
- Infuse the flush at the same rate as the original drug being administered; this will prevent the patient from getting an accidental rapid bolus of the original drug.
- Check with a specialist when flushing neonatal venous devices – the flush volumes tend to be in the order of 1-2 ml.
• Flush venous cannulae that are not in use; this prevents the cannulae becoming blocked.

• Venous cannulae not being used should be removed to minimize infection, unless they are being kept for a specific reason.

• For central venous catheters, it is common to fill the dead space of the catheter with a lock solution (e.g., heparin, citrate, antibiotic); this prevents the catheter from getting blocked by blood clots and reduces risk of infection.

• The volume of the lock must be accurately known so that when the lock is injected into the catheter, it only reaches the catheter tip and does not go into the patient’s bloodstream.

• Catheters containing locks should be carefully labeled so that the next person using the catheter removes the lock drug prior to the catheter use.

References

electronic Medicines Compendium (eMC): http://www.medicines.org.uk

Note: A narrated e-Learning module of this Nugget is available at LearningNurse.com.