Administration of arterial fluids via pressure monitoring line

All infants who require intra-arterial fluids will have the procedure for administration of fluids and pressure monitoring carried out in a safe manner.

Equipment
Prescription chart, prescribed fluid (usually 0.45% NaCl with 1iu. Heparin/ml), IV extension line, no-needle spike, pressure transducer set, 50ml syringe, red 'no-needle' luer lock stopper, infusion pump (see note 1).

Procedure

- Equipment is assembled and placed in an accessible position for carrying out the procedure.
- Procedure should be carried out following ANTT guidance. Cleanse hands according to NNU policy.
- With another registered nurse/midwife, check the prescription chart. (see note 2).
- Obtain bag of heparinised saline, squeeze and inspect the bag for leaks, discolouration or particles. If the bag is damaged or abnormal do not proceed.
- Insert ‘no-needle spike’ in the heparinised saline solution bag.
- Connect the syringe to the smart site of the spike, using a non-touch technique and withdraw approximately 50mls of heparinised saline solution.
- Attach the extension line and connect this to the syringe; prime the line expelling all air.
- Connect the pressure transducer set to the extension line; whilst pulling the yellow tab on the pressure monitoring set, infuse the heparinised saline expelling all air.
- Ensure a red 'no-needle' smart site is attached to the side port of the 3 way tap.
- Load the syringe into the pump and switch on the pump, adjusting rate to required amount.
- Attach the pressure monitoring set to the phillips arterial extension line. (see note 3).

Calibration

- Prior to calibration, place the pressure transducer set at cardiac level.
- Close off the circuit to the baby by adjusting the 3-way tap that is proximal to the baby. On the transducer, close the inbuilt 3 way tap, off to baby and open to air. Remover the smart site from the port. On phillips monitor press ‘Zero Art’ and wait until notification that calibration is complete at top of screen.
- Replace the smart site and turn the 3-way tap so that it is off to the smart site. Open the proximal 3-way so that it is off to the red smart site but open to baby.

- The syringe and extension line should be changed every 24 hours.

Potential complications
Extravasation, infection, haemorrhage, incorrect infusion fluid and rate of flow.

Notes

1. BD Alaris CC pump with BD extension line.
2. Where continuous drug infusions are prescribed, the prescription must be checked by two registered nurse/midwives. Protocol for checking drugs
    - All prescriptions are checked by 2 registered nurses/midwives who have completed the Paediatric IV course for accuracy in:
        - patient name, ID number, weight and gestation, actual age
        - drug to be given, route of administration, special instructions, legibility of the signature of the prescribing person,
        - date and time of current dose and
        - date and time of previous dose.
    - The prescription should be checked against the drug monograph:
        - drug name,
        - dose (considering gestation, weight, actual age),
        - therapeutic monitoring level (check 'Antibiotic drug level' entry in baby's Badger notes if appropriate),
        - incompatibilities and reconstitution (if appropriate).
    - Having independently calculated the dose and volume to be infused (in mls/kg/dose and or rate/minute) the 2 nurses/midwives must confer and agree on the dose before proceeding.
    - Both nurses/midwives must check that the solution is attached to the correct line, there are no incompatibility concerns (see drug monograph) and the pump rate is correct; this applies when new lines are connected and in the event of an alteration in rate to the current line.
    - The prescription chart is signed by both nurses/midwives at the time of commencing the infusion and when any changes in rate occur.
3. If replacing only IV fluids and not the transducer set, ensure the line is calibrated following change in syringe.

References

Campbell T., Lunn D. (1997) Intravenous therapy: current and nursing concerns. British Journal of Nursing 6 (21) : 1218-1228.
Vost J., Longstaff V. (1997) Infection control and related issues using intravenous therapy. British Journal of Nursing 6 (15) : 846-857.