Prostaglandin Care Bundle

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BACKGROUND

Prostaglandin E1 (PGE1) is used in neonatal units to maintain patency of the Ductus Arteriosus for infants born with a duct dependent cardiac abnormality. It is a complex medication with many side effects (Meeks et al, 2009). It is also a drug which is not used on a regular basis in local neonatal units.

Drug errors or near misses are a significant contributor to clinical incidents on the neonatal unit, (Chuo & Lambert 2007) thus demonstrating the importance of established safety procedures and guidelines.

The introduction of care bundles helps to standardise safety practices in the administration of medications in the neonatal unit (Boxwell, 2010). A bundle is dependant on all elements being delivered at the right time, consisting of a number of interventions that every patient should receive collectively during one clinical episode of care (McCarron, 2011)

Aim

The aim is to reduce the potential for medication error with the introduction of a Prostaglandin Care Bundle. This will also ensure consistency with patient care, quality of care and patient experience. It will also provide a tool for continuous audit.

Developing the care bundle

Plan

• Make a list of all staff who need to be involved
• Ensure all staff are aware of the care bundle
• Are all staff in agreement of contents?

Do

• Introduce the use of the care bundle by educating staff on its use
• Nursing staff need to work through the bundle and evaluate its use and effectiveness

Act

• Decide on changes that could be made
• Introduction of the finalised care bundle onto the unit by study days

Study

• Decide which changes lead to an improvement
• Modify the care bundle according to feedback from staff

“A Care bundle is a structured way of improving processes of care and patient outcomes” (Boxwell, 2010)

Prompt for the preparation and administration of intravenous Alprostadil/ Dinoprost (Prostaglandin E1)

• Please use this prompt each time a dose of Alprostadil/ Dinoprost is prescribed and administered.
• Both members of staff are to use the prompt.

Clinical baby checks pre administration. Please check all these factors before commencing Alprostadil/Dinoprostine

1. Ensure urine output

2. Blood gas taken

3. CXR

4. Has the baby got central access

5. Has the baby got a suspected duct dependent cardiac condition?

6. Is it in line to be kept open

7. Has the baby been given the correct medication

8. Does the baby have access to CPAP

9. Has the baby got a suspected duct dependent cardiac condition?

10. Has the baby got central access

11. Has the baby got arterial blood gases at initiation of therapy and thereafter at consultant’s request

Administration

5. Has it been prescribed correctly following the 5 R’s

6. Is the patient’s current working weight recorded on the prescription chart?

7. Has the correct dose been prescribed based on the weight?

8. Has the prescription been signed by the prescriber?

9. Is this the correct medication?

10. Is the prescription in nanograms/ml solution

11. Has the correct volume been drawn up? Each checker to calculate dose independently

During administration of Alprostadil/Dinoprostes please remember

• Monitor arterial blood gases at initiation of therapy and thereafter at consultants request
• To observe the baby continuously
• Continuous monitoring of heart rate, respiratory rate
• If not intubated ensure baby has an apnoea monitor in situ
• To monitor baby’s blood pressure 2-4 hourly
• To observe for signs of clinical deterioration

Reconstitution

Prostin VR – 500 micrograms (mcg) ml Ampoule

• Dilute 1 ml with 9 ml of 0.9% Sodium Chloride (or 5% Dextrose) to make a 50 microgram solution

• Take 1 ml of this and dilute to 50mls (total) to make a 1 microgram (mcg) ml solution

• You will have 50 micrograms (mcg) in 50 ml

Prescribing formulary

50micrograms/ml

• Alprostadil

• Dinoprostone

Nursing calculations

Dose micrograms x 1000 = (nanograms)

Divide by volume to be diluted in (total)

Divide by weight

Multiply by rate

Outcome

By the introduction of this Care Bundle practice will become standardised, prevent complications and reduce adverse incidents, therefore improving both the quality of care and patient outcomes.

McCarron K, 2011 Nursing made incredibly easy, Routledge
Institute for Healthcare Improvement what is a bundle? IHI 2009 available at
http://www.ihi.org/tq/quality_and_safety/what_is(Bundle)