Overdose of intravenous paracetamol in infants and children | Signal

1293 F
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This Signal concerns the risk of harm to infants and children from inadvertent overdose of intravenous paracetamol.

A sample incident reads:

"...intended to give a dose of 10mg/kg of paracetamol intravenously, gave 100mg/kg. realised error as soon as dose had been given, asked the ODP to summon Dr XX immediately...suggested how to treat overdose. This consisted of HDU level monitoring, parvolex infusion and monitoring of blood tests."

Intravenous paracetamol (Perfalgan) is used widely in paediatric settings and has become a base analgesic for many clinical procedures. It provides both analgesic and antipyretic actions. It is available as a solution for infusion in 50ml and 100ml vials. The recommended dose is dependent on patient weight with four possible dosing regimens each with recommended maximum daily doses.

The NPSA received a number of concerns from anaesthetists, risk managers and pharmacists relating to incidents of inadvertent intravenous paracetamol overdose in children. A search of the National Reporting and Learning System (NRLS) identified 206 relevant incidents (44 neonates* and 162 children) associated with two severe harm, 14 moderate harm, and the remainder low or no harm.

Incident themes include:

- lack of awareness amongst healthcare professionals of neonatal and paediatric drug dosage regimens;
- patients receiving doses of paracetamol in both theatre and ward due to poor documentation;
- human error relating to setting up infusion pumps to administer intravenous paracetamol (incorrect rate or incorrect/ no volume to be infused (VTBI));
- confusion between dosing regimens for oral and intravenous paracetamol with clinical staff believing they are interchangeable;
- 10 times dose calculation errors in both the prescription and administration of intravenous paracetamol.

In July 2010 the MHRA released a Drug Safety Bulletin advising vigilance when prescribing and administering paracetamol solution for infusion to ensure the correct dose is given. They advised that dose requirement is based on weight and provided recommended dosing regimens. They also advised that for infants and children weighing less than 33Kg the 50 ml vial should be used for administration.

Please contact us with information about any of your initiatives to reduce risk in this area.

Signals are notifications of key risks emerging from review of serious incidents reported to the NRLS and shared by the NRLS.

*A neonate is defined as any infant aged 0-28 days that may or may not require