Northern Devon Healthcare NHS
NHS Trust

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Patient Safety ALERT : Phenytoin injection

Risk of death and severe harm from error with injectable phenytoin

NHS England have published a Patient Safety Alert[1] following two recent fatal incidents involving the use of injectable phenytoin in status epilepticus.

A further search of the National Reporting and Learning System (NRLS) in the preceding three years revealed **2,200 patient safety incidents** including **two further deaths**, **five severe** and **121 moderate harm** incidents.

Phenytoin has a narrow therapeutic index, meaning that there is little difference between the effective dose and a larger dose that can cause harm. A loading dose, to quickly raise the amount of the drug in the body, is recommended for injectable phenytoin and guidance on patient safety issues has previously been issued[2].

A review of nationally reported incidents identified the following themes associated with errors:

- Wrong weight estimated or patient not weighed
- Failure to take account of existing phenytoin levels for loading dose
- Supply issues and stock not available in clinical area
- Misreading 100mg as 1,000mg and vice versa
- Confusion around dilution and non-dilution of injectable phenytoin and failure to take account of the subsequent concentration
- Wrong diluent used
- Infused through the same line with an incompatible medicine
- Failure to use an in-line filter
- Wrong infusion rate
- Loading dose continued for maintenance without dose change
- Monitoring equipment not available
- Failure to monitor the effectiveness of phenytoin and any toxic effects

FOR ACTION

- **Phenytoin is a particularly complicated injectable medicine to use:** The complexity of phenytoin injection prescribing, preparation, administration and monitoring may be under-recognised;
- **Ensure that all staff have access to guidance to support safe use (BNF, Summary of Product Characteristics, :** Pharmacy can be contacted for additional advice
- **Ensure ALL STAFF are aware of this information, that this is discussed at local team meetings and that it is displayed where staff are able to access and read it.**
- **Ensure that ALL STAFF are aware of:**
  1. **The Medication Loading Doses standard operating procedure**
  2. **The Trust Injectable Medicines Policy** including the process for risk assessing injectable medicines
  3. **How access the injectable medicines risk assessment guide (Medusa) on Bob (username = nddhpharm password = password1) –** *select **'IntraVENOUS drugs'** from the menu on the left hand side of the page and search for **phenytoin***

1. NHS/PSA/W/2016/010: Patient Safety Alert: Risk of death and severe harm from error with injectable phenytoin. NHS Improvement. 9 Nov 16
2. NPSA/2010/RRR018: Rapid Response Report:: Preventing fatalities from medication loading doses. National Patient Safety Agency 25 Nov 11

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