NSW HEALTH

Safety Notice 011/10

Medication Incidents Involving Hydromorphone (Opioid)

16 September 2010

Distributed to:

- Chief Executives
- Directors of Clinical Governance
- Directors of Clinical Operations

Action required by:

- Directors of Clinical Governance

We recommend you also inform:

- Drug and Therapeutics Committees
- Directors of Surgery
- Directors of Anaesthetics
- Directors of Intensive Care/Critical Care
- Area Directors of Nursing and Midwifery
- Directors of Palliative Care
- Directors of Pharmacy
- Directors of Oncology and Cancer Care
- Nursing Unit Managers
- Midwifery Unit Managers
- Intensive Care Nurses
- Oncology and Cancer Care Nurses
- Palliative Care Nurses

Expert Reference Group

Content reviewed by:

- Medication Statewide Expert Advisory Committee
- NSW Therapeutic Advisory Group
- Agency for Clinical Innovation
- Nursing and Midwifery Office
- Clinical Safety Quality & Governance Branch
- Statewide Services Development Branch
- Clinical Excellence Commission

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Background

Hydromorphone hydrochloride (hydromorphone) is an opioid analgesic which when given parenterally, has approximately **five times the potency of morphine.** It is often used in pain management or palliative care.

Hydromorphone is available in the following dose forms:

- immediate release tablets 2mg, 4mg, 8mg;
- modified release tablets 4mg, 8mg, 16mg, 32mg, 64mg;
- oral liquid 1mg/mL and
- regular 2mg/mL and high strength 10mg/mL injection (subcut, IM, IV)

In NSW hospitals, incidents involving hydromorphone have resulted in serious patient outcomes including death.

Contributing Factors

The majority of incidents involved administration errors including:

- Confusion between the names and preparations of hydromorphone and morphine.
- Poor understanding that **hydromorphone is five times more potent than morphine**.
- Existence of both oral and injectable hydromorphone solutions that may increase the risk of product selection error during the administration process.
- Complex calculations due to the need for fractional dosing when using high potency ampoules and the inclusion of decimal points in the medication order.

Suggested strategies for reducing hydromorphone incidents

Access/Storage

- Limit prescription, use and storage of hydromorphone to areas in specialist pain management or palliative care services (where possible).
- If both hydromorphone and morphine products are stored together, ensure ampoules of hydromorphone are not stored next to ampoules of morphine.

Protocols

- Review therapeutic protocols to ensure use of hydromorphone is clear and that staff are aware of the **differences between hydromorphone and morphine**. Dose, selection, and potential for cumulative effects with other drugs must be considered.

Administration

- Ensure staff complete an independent double check of medication orders and preparation prior to administration, including dose, strength, and route.
- Regular observations must be taken with a process in place for immediately escalating care for patients who clinically deteriorate - See '*Recognition and Management of a Patient who is clinically deteriorating*' PD2010_026 policy.
- If overdosing occurs, ensure the patient is resuscitated immediately, closely monitored with care escalated as necessary.

Education/ Competencies

- Ensure staff involved directly or participating in pain management or palliative care have appropriate education and prerequisite competencies relating to the administration of opioid medications.

References:

- Australian Medicine Handbook Pty Ltd. Last Modified by AMH: January 2010

Suggested Actions by Area Health Services:

1. Distribute this Safety Notice to all relevant clinical staff.
2. Review the appropriateness of use of hydromorphone in clinical areas.
3. Keep only one strength of each form of hydromorphone products in stock, where possible.
4. Where multiple strengths and forms of hydromorphone and morphine products must be kept and stocked together, ensure they are stored in a way to prevent selection error.
5. Ensure a risk management approach to the use, administration and safe handling of hydromorphone is included in local guidelines.
6. Ensure staff education on high risk drugs results in knowledge of hydromorphone administration and care procedures.
7. Drug & Therapeutic Committees should review current and potential use of hydromorphone as part of formulary management.
8. Ensure staff are aware that further information is available via the CIAP website at http://www.ciap.health.nsw.gov.au or http://internal.health.nsw.gov.au