Spontaneous reporting: Detecting medication errors and suitability of current systems

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Session objectives

- Experience with reporting medication errors in national pharmacovigilance databases
- How to identify medication errors in signal detection systems
What is a medication error?

‘…medication error refers to any unintentional error in the prescribing, dispensing, or administration of a medicinal product while in the control of the healthcare professional, patient or consumer’

GVP Module VI

‘Anything to do with a medicine I’ve been given that causes me harm’

Patient perspective
How do we ask a patient?

Do you think this reaction occurred as a result of an unintentional error in the prescription, dispensing or administration of the medication?

- Yes
- No

Please provide further details of the medication error.

A medication error refers to any unintentional error in the prescribing, dispensing or administration of a medicine while in the control of a healthcare professional or the patient. For example this could be a mistake in the dosage of a medicine or how it was taken.

Step 4. Side Effects  Cancel  Previous step  Continue
Coding

- Reliant on coding for accurate signal detection

BUT

- Often automated in different ways
- Global issue; different cultures, different systems

- Is there a right question to ask?
  - Cannot manually screen every report
Spontaneous data

- High volume, but lower strength of evidence
  - ~ 26,000 UK cases received per year
  - > 80% received electronically
  - Patient, health professional and industry cases

- Excellent information on real life use of a product

- Most frequently used signal detection methods identify drug-event combinations (DECs) of interest
  - Is this useful for medication errors?
MEs in spontaneous data

- Patient
- Dose
- Frequency
- Brand
- History
- Route
- Concomitant medications
- Previous allergies
MHRA Signal Management process

- ADR reports received & processed
- Assessment
- Signal detection
- Impact Analysis
- Signal Evaluation and Prioritisation
  - Risk-benefit evaluation and advice from CHM
  - Regulatory action and communication
Signal detection methodologies

- Disproportionality methods

- Criteria based
  - Seriousness indicators
  - Population groups
  - Reaction terms of interest

- Individual case review

  Used predominately to analyse large datasets to filter cases of highest priority
MEs through signal detection

- Disproportionality against medication error MedDRA terms

- Medication error flagged as an ‘Alert Term’ that is always highlighted for review
  - Reliant on appropriate coding
  - Should always be discussed in signal evaluation

- Often identified outside of these means through cases reviewed as a result of other criteria
Signal Assessment

- Consider whether the event is listed in existing product information
  - Might there be a change in frequency?

- Are there any confounding factors?
  - Patient history
  - Other drugs

- What was the time between taking the drug to the suspected reaction?

- Is the event biologically plausible, or a potential class effect? Is it a potential signal?
Hedrin & ignition issues

- Received as Yellow Cards
  - ‘…head caught fire…’
  - Identified prior signal processes due to coding issues
  - Fed into signal management process

- Thanks to Jan MacDonald for providing images used in this presentation
Signal Assessment & Meetings

- If the issue merits further discussion will be evaluated at a signal meeting.

- Two signal detection meetings each week which includes scientists and assessors of scientific and medical disciplines.

- Signal software used in the meetings to aid assessment.

- Should the meeting deem it necessary further evaluation is carried out that week.
RPPS and Impact Analysis

Additional evidence based tools used for further evaluation of signals:

Impact Analysis

- Tool to prioritise possible signals and decide the next step that should be taken. Takes into consideration the strength of evidence as well as the public health implications of the signal.

RPPS

- The Regulatory Pharmacovigilance Prioritisation System. Prioritisation system additionally taking into account public perception of the ADR and Agency obligations.
Fentanyl Patches

Durogesic R DTrans R transdermal patch fentanyl

50 mcg/hr

One transdermal patch contains 8.4 milligrams of fentanyl (absorption rate approx 50 micrograms/hour; active surface area 21.0 cm²)

FOR TRANSDERMAL USE
Each patch also contains: polyacrylate adhesive, polyethylene terephthalate/ethyl vinyl acetate film, green printing ink and siliconised polyester film.

POM
C.D.

Read the leaflet before use. Dosage: as directed by the doctor.
Remove your old patch before applying a new one on a new area of skin. Apply a new patch every 3 days (72 hours).

Opening Instructions

- Gently tear or cut open the pouch at the tear notch, shown by the arrow, and remove the edge of the pouch completely (if you use scissors, cut close to the sealed edge of the pouch to avoid damaging the patch)
- Grasp both sides of the opened pouch and pull apart completely
- Take out the patch and use straight away
- Never divide or cut the patch. Do not use the patch if it looks damaged

Keep out of the reach and sight of children.

DISPOSAL AFTER USE: DO NOT throw the pouch away after removing the patch inside. Keep it to put your used patch in. As soon as you take the patch off, fold it firmly in half (sticky sides together) and put it back in the pouch. Put the pouch in the bin with your household rubbish.

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Signal Management

- All signals that warrant further action are discussed at a weekly Signal Management Review Meeting

- Brings together expertise across the Agency including Assessors, Medics and Epidemiologists

- Signals are fully evaluated including assessment of biological plausibility and potential class effects

- Action are discussed and endorsed (including further expert advice required) the priority of the signal is agreed and team allocation is decided
Regulatory Action

There are a number of actions that can be taken with respect to medication errors, just some examples include:

- Updating product information (SPC/PIL)
- Improved packaging
- Warnings in safety bulletins
- Propose changes across EU network
Fentanyl patches: serious and fatal overdose from dosing errors, accidental exposure, and inappropriate use

Article date: September 2008

Summary

We have received reports of unintentional overdose of fentanyl due to dosing errors, accidental exposure, and exposure of the patch to a heat source. Fentanyl is a potent opioid analgesic and should be used only in patients who have previously tolerated opioids.

Fentanyl patches are licensed for the management of malignant and non-malignant chronic intractable pain. Fentanyl is a controlled drug in the UK and is subject to schedule 2 of the Misuse of Drugs Regulations. Common brands include Durogesic DTrans, Durogesic, Matrifel and Tilofyl.

Reports of life-threatening adverse reactions and death

We have received spontaneous reports from healthcare professionals, patients, and carers of life-threatening adverse reactions and death after fentanyl overdose in people who were using the patches to control malignant and non-malignant pain.

Factors identified as possibly related to unintentional overdose include dosing errors (by healthcare professionals, patients, or caregivers); accidental exposure (particularly in children); and exposure of the patch to a heat source, possibly resulting in increased fentanyl absorption. These reports also provide some evidence of inappropriate prescribing of fentanyl patches, including prescribing in unlicensed indications and in opioid-naive patients.
Conclusions

- A cross-function issue;
- May be identified from many sources
  - Spontaneous data
  - Press
  - Lawyers
  - Patient groups
- Signal detection heavily reliant on accurate and consistent coding conventions
- Different teams and organisations must work closely together throughout the signal management process