Practice sting Dosage check of oxycodone

This Practice Sting is particularly interesting for prescribers and pharmacists

The fact that dosage check in prescribing and pharmacy information systems can be different than healthcare professionals expect is evident from the following notification, with potentially major consequences for the patient.

Notification

A man has been admitted for the treatment of an oncological condition. Because the patient must receive medication through a tube, the doctor converts the oxycodone tablets to oxycodone solution. The nurse administers the solution. The man develops complaints shortly afterwards. He becomes dizzy and light-headed. He also has visual disturbances, itching and a dry mouth. The nurse checks the medication with a colleague. The man receives 10 ml of oxycodone oral solution 10 mg/ml four times a day. The doctor appears to have converted one tablet of oxycodone 10 mg into 10 ml of oxycodone drink 10 mg/ml. This means that the patient does not receive 10 mg but 100 mg each time. The nurses contact the doctor. The man is given the antidote naloxone and is monitored extra.

Analysis

When prescribing a dosage ten times too high as in this notification, one would expect that the prescriber and the pharmacy would receive a notification. With oxycodone, such a notification may or may not occur, depending on the type of electronic prescribing system (EPS) and pharmacy information system (AIS). This is because not all systems deal in the same way with the fact that oxycodone dosages can differ greatly from each other.

The dosage for a 'normal' preparation is initially 5 mg every 4-6 hours, gradually increasing if necessary to a maximum of 400 mg per day. EPSs and AISs that use medication monitoring data from the G-Standaard provide a signal when prescribing or dispensing if the daily dose is higher than 400 mg. EPSs and AISs, which use medication monitoring data from Health Base, also give a signal if the standard dosage of 30 mg per day set by Health Base is exceeded.

The hospital to which the patient has been admitted has an information system that is supported by the G-Standaard for medication monitoring. That is why the doctor and the pharmacy received no signal when the patient was prescribed 400 mg oxycodone instead of 40 mg per day after converting from tablet to solution. The fact that the pharmacy assistant who delivered the oxycodone solution and the nurse who administered the solution did not notice that the conversion was incorrect was because administering 10 ml of solution is not unusual.

Recommendations

For prescribers

- Prescribe the dosage of a solution in milligrams.
- When converting from tablet to solution for example, check whether the number of milligrams corresponds.
- Realize that the automatic dosage check in most EPSs is based on the maximum daily dosage stated in the product information.

For pharmacists

- When converting from tablet to solution, for example, check whether the number of milligrams corresponds.
- Realize that the automatic dosage control in most AISs is based on the maximum daily dosage stated in the product information.