Japan Council for Quality Health Care

Project to Collect Medical Near-Miss/ Adverse Event Information

Medical Safety Information

No.158, January 2020

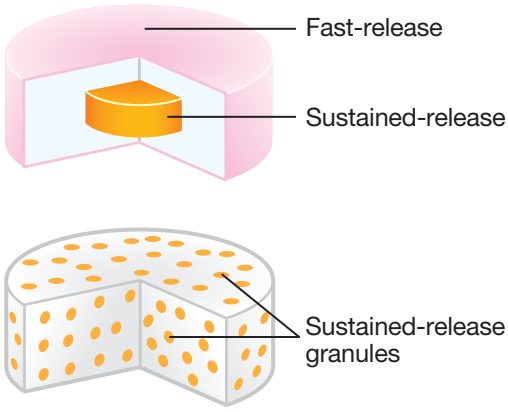
Administration of a Sustained-Release Preparation in Ground-Up Form

Four cases have been reported in which a sustained-release preparation was ground up before administration (information collection period: from January 1, 2014 to November 30, 2019). This information was compiled on the basis of the content featured in the Analysis Themes section of the 53rd Quarterly Report.

Cases have been reported in which a sustained-release preparation was ground up and administered to a patient, with the result that the active ingredient was rapidly absorbed into the patient's body and affected them.

Sustained-Release Preparation (Efficacy Classification)	Effect on Patient	Number of Cases
NIFEDIPINE CR TABLETS (Long-acting calcium channel blocker / antihypertensive/antianginal drug)	Blood pressure dropped	2
Careload LA Tablets (Oral prostacyclin (PGI_2) derivative prolonged-release preparation)	Blood pressure dropped	1
OXYCONTIN (Controlled-release agent for cancer pain management)	Level of consciousness declined Respiratory condition deteriorated	1

Image of a sustained-release preparation



- Sustained-release preparations are drug preparations in which the speed, duration, and site of the active ingredient's release are adjusted.
- Sustained-release formulations are indicated by letters in the name of the drug, such as L (long), LA (long-acting), R (retard), SR (sustained-release), and CR (controlled-release).
- The reported cases involved the administration of the drugs in question via a nasogastric feeding tube or an enterostomy tube.

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Case 1

The resident prescribed Nifedipine CR Tablets 20 mg, unaware that the patient had a nasogastric feeding tube. The nurse ground up the Nifedipine CR Tablets that had arrived from the pharmaceutical department and administered them via the nasogastric feeding tube. An hour later, the patient's blood pressure fell into the 80 mmHg range. When the ward pharmacist investigated the cause of the patient's sudden drop in blood pressure, they realized that the sustained-release preparation had been ground up before administration.

Case 2

The patient was taking Careload LA Tablets for pulmonary hypertension. After admission, the patient underwent tracheal intubation and had a nasogastric feeding tube inserted. The nurse ground up the Careload LA Tablets and administered them via the nasogastric feeding tube every day. As the patient's blood pressure dropped every time after they were administered, the physician checked the package insert for the Careload LA Tablets and realized that the tablets were a sustained-release preparation and that grinding them up for administration had caused the patient's sudden drop in blood pressure.

Preventive measures taken at the medical institutions in which the events occurred

- **Ensure medical staff understand that sustained-release preparations must not be ground up, as they are drug preparations in which the release of the active ingredient has been adjusted.**
- **When grinding up prescribed tablets on the ward for the first time, ask the pharmacist or check the package insert to confirm whether the tablets are suitable for grinding up.**

The measures above are examples. Please consider initiatives suitable for your own facility.

* As part of the Project to Collect Medical Near-Miss/Adverse Event Information (a Ministry of Health, Labour and Welfare grant project), this medical safety information was prepared based on the cases collected in the Project as well as on opinions of the "Comprehensive Evaluation Panel" to prevent the occurrence and recurrence of medical adverse events. See the Project website for details.
http://www.med-safe.jp/

* Accuracy of information was ensured at the time of preparation but cannot be guaranteed in the future.

* This information is intended neither to limit the discretion of healthcare providers nor to impose certain obligations or responsibilities on them.

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