



Japan Council for Quality Health Care

Project to Collect Medical Near-Miss/
Adverse Event Information

Medical Safety Information

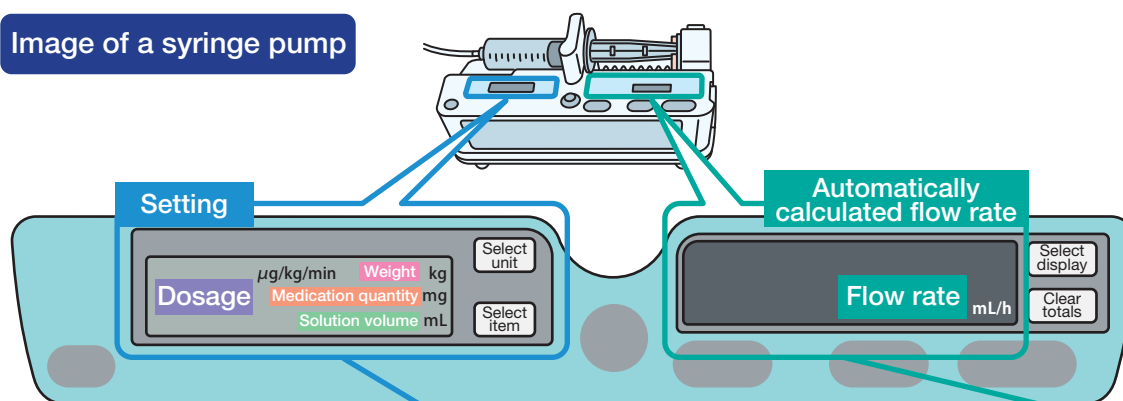
No.119, October 2016

Incorrect Setting of Medication Quantity or Solution Volume on a Syringe Pump

Three cases have been reported involving the administration of a drug at the wrong flow rate due to incorrect settings on a syringe pump that automatically calculates the flow rate when the medication quantity, solution volume, etc. is entered (information collection period: from January 1, 2013 to August 31, 2016). The information is compiled based on “Individual Theme Review” in the 12th Quarterly Report.

Cases have been reported in which the wrong medication quantity or solution volume was entered on a syringe pump, resulting in the wrong concentration being set and the drug being administered at a flow rate other than that intended.

Image of a syringe pump



Drug Name	Setting					Concentration error in the settings	Flow rate error
		Weight (kg)	Medication quantity (mg)	Solution volume (mL)	Dosage* (µg/kg/min)		
Propofol	Intended	Not specified	10	1	Not specified (mg/kg/h)	1/10	10 times
	Actual		1				
Ultiva	Intended	60	0.1	1	0.5	1/5	5 times
	Actual			5			
Bosmin	Intended	10	0.3	10	0.05	10 times	1/10
	Actual			1			

* Depending on the model, the dosage units may include not only µg/kg/min, but also other options, such as mg/kg/h.

Incorrect Setting of Medication Quantity or Solution Volume on a Syringe Pump

Case 1

When administering Propofol using a syringe pump, the medical staff involved meant to enter the medication quantity as 10mg and the solution volume as 1mL, but erroneously entered the medication quantity as 1mg. Consequently, the concentration was set at one-tenth the actual level and the infusion began to be administered at the calculated flow rate, which was ten times the intended rate. Three minutes after starting administration, the medical staff involved noticed the error in the syringe pump settings and halted administration.

Case 2

After dissolving Ultiva and placing it in the syringe pump, the physician intended to set the weight as 60kg, the medication quantity as 0.1mg, the solution volume as 1mL, and the dosage as 0.5µg/kg/min. The patient's blood pressure dropped immediately after starting administration, so the physician checked and found that s/he had erroneously entered the solution volume as 5mL. Consequently, the concentration was set at one-fifth the actual level and the infusion was being administered at the calculated flow rate, which was five times the intended rate. The physician had not checked the flow rate displayed before administering the infusion.

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

- Medical staff will check the medication quantity and solution volume set on the syringe pump immediately before starting administration.

Complementary comment by the Comprehensive Evaluation Panel

- Check whether the calculated flow rate is correct.

* 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 quarterly reports and annual reports posted on the Japan Council for Quality Health Care website for details of the Project.

<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.

