

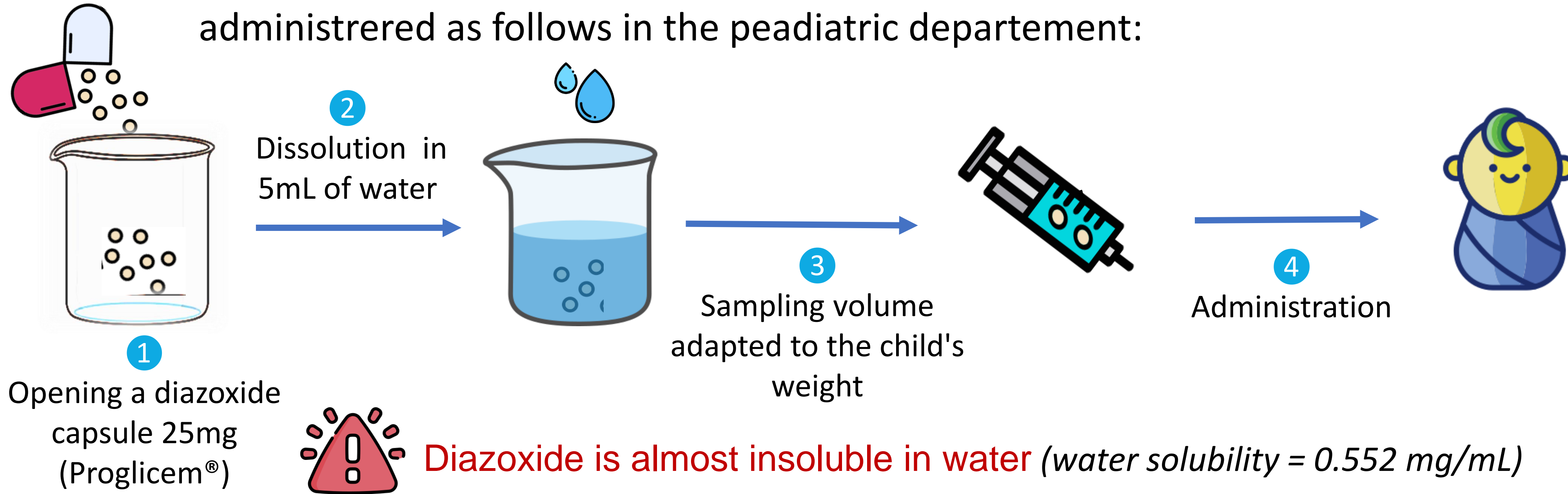


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CONTEXT

- Diazoxide = first-line treatment for hyperinsulinemic hypoglycemia in children, administered as follows in the paediatric department:

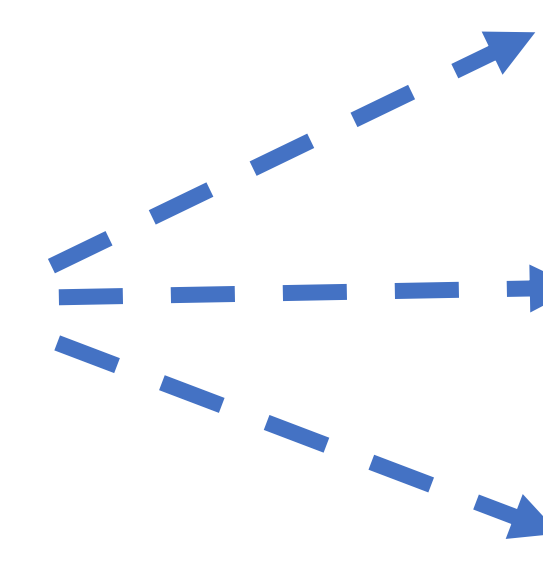


OBJECTIVES

- To measure the quantity administered to the patient
- Study alternatives to optimize the therapeutic management and secure the dose administered were also studied.

MATERIEL & METHODS

- Analysis & quantification of diazoxide by using UV spectrophotometry ($\lambda = 280 \text{ nm}$).
- Analytical validation criteria of this assay method : **Linearity, Accuracy, Precision, Specificity**



- 25mg capsules (Proglidem®)
- Similar protocol using 5mg capsule (prepared in-house)
- 5mg capsule and multiple rinses of container

Dosing	Volume of dissolution in water	Concentration achieved	Dilution factor (in 0.1M NaOH)	Final concentration measured
Proglidem® 25mg	5mL	5mg/mL	500	10 μ g/mL
Diazoxide 5mg	5mL	1mg/mL	100	10 μ g/mL
Diazoxide 5mg	2+2+1mL	1mg/mL	100	10 μ g/mL

RESULTS

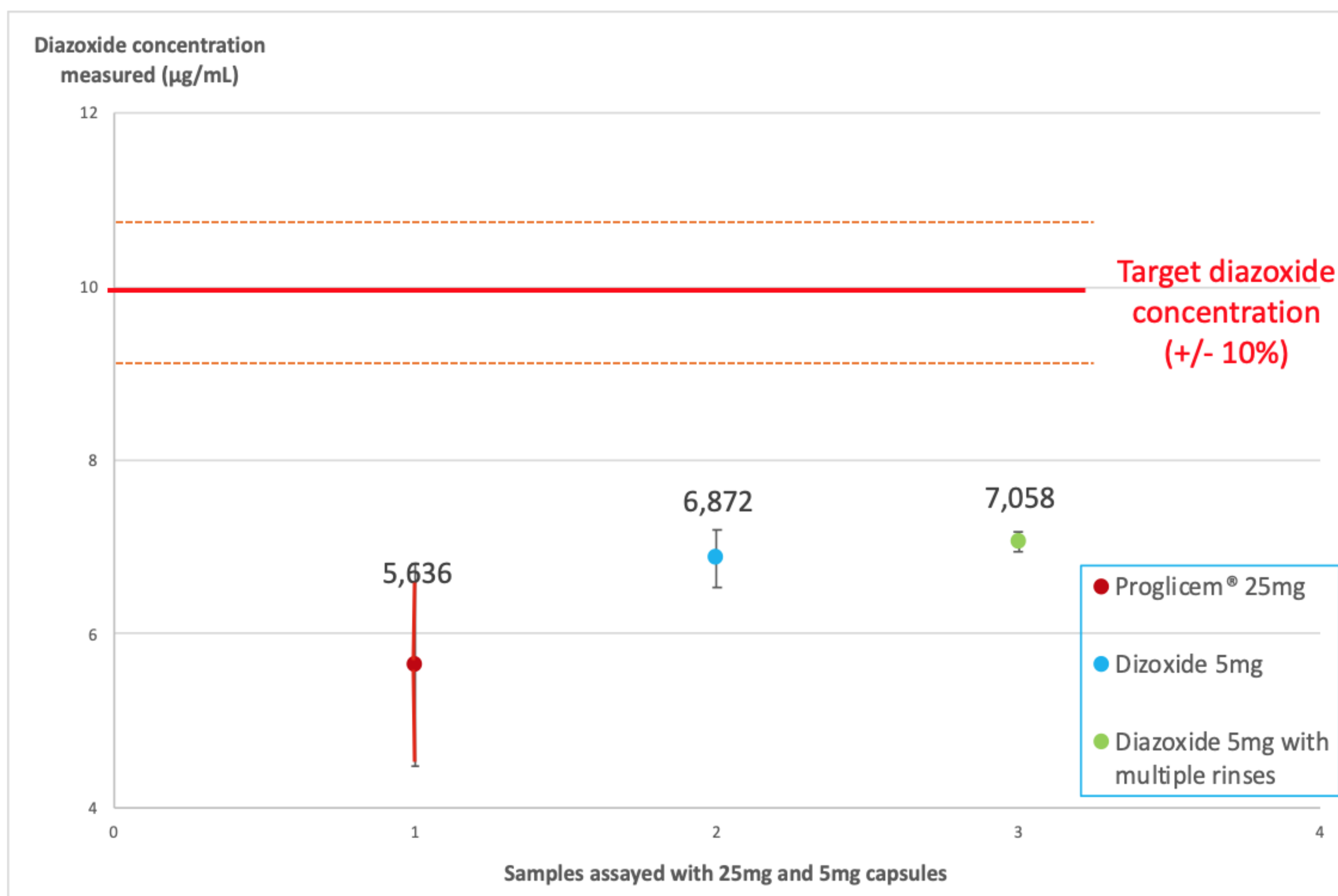
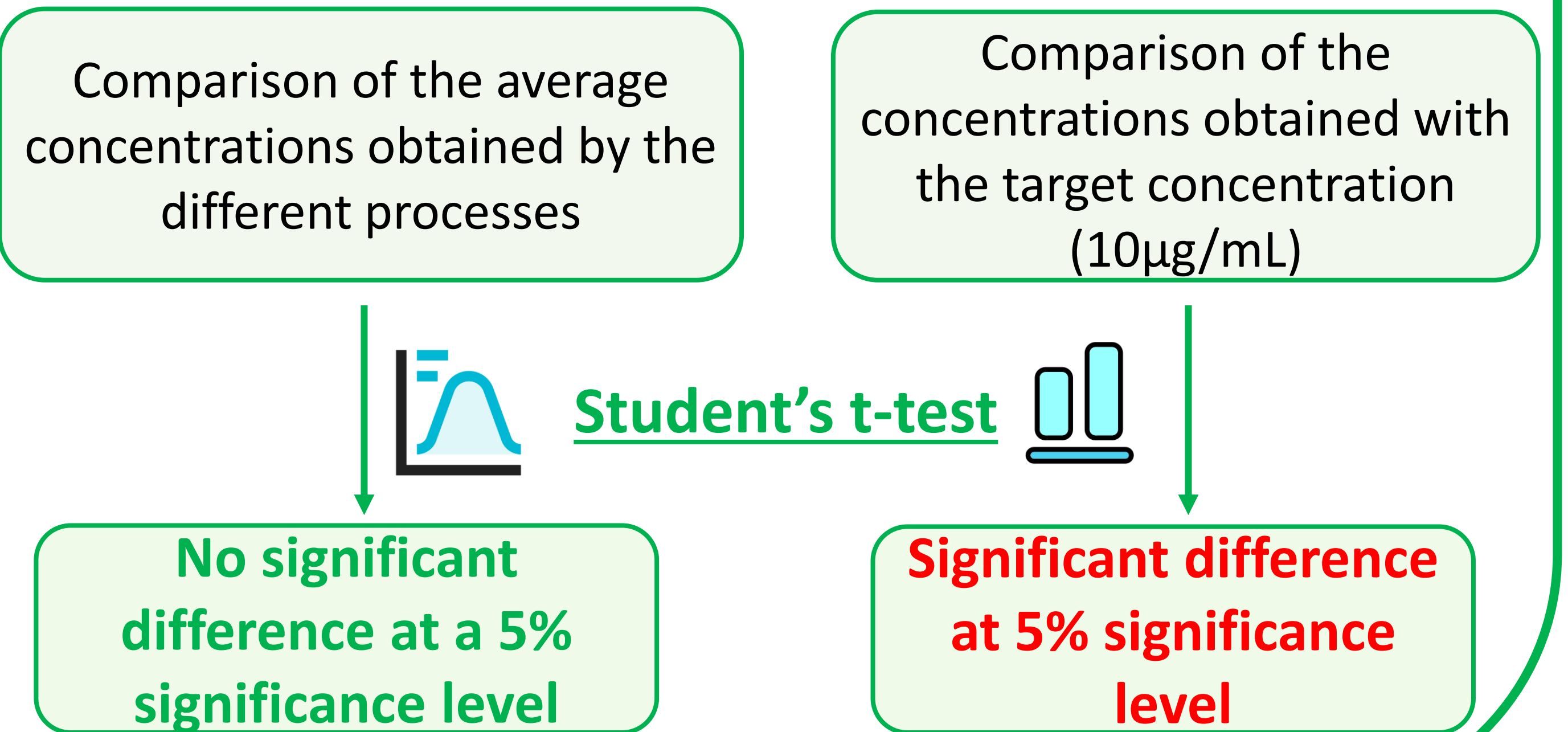


Figure 1. Dosage of different presentations of Diazoxide with or without rinsing the container

Dosing	Average concentration in water (n=5)
Proglidem® 25mg	5.64 μ g/mL ($\pm 1.17 \mu$ g/mL)
Diazoxide 5mg	6.87 μ g/mL ($\pm 0.34 \mu$ g/mL)
Diazoxide 5mg with multiple rinses	7.06 μ g/mL ($\pm 0.12 \mu$ g/mL)

→ Dilution of a 25mg capsule : wide variation in the concentration obtained



CONCLUSION & DISCUSSION

- The method using Proglidem capsules shows greater variability → **significant risks of under-dosing.**
- The other methods are more reproducible (because the dosage is more appropriate) but, because of diazoxide poor solubility, they all involve a risk of underdosing in the end.



Developing a ready-to-use oral suspension could improve dosing accuracy and security.

