



Evaluation of drug leftovers in vials with CSTDs

BACKGROUND

Oncology pharmacists have nowadays accepted the use of Closed System Transfer Devices (CSTD) for the preparation of cytotoxic drugs as a way of protecting healthcare workers and the preparations. Compounding with CSTDs also allow them to keep drug vials for several days (if the stability of the drugs permit it), which is a big advance when dealing with drug wastage. Indeed, cytotoxic drugs can be very expensive and today, withdrawing until the last drop is an issue.

1/ OBJECTIVE

The objective is to evaluate the residual volume of drug in a vial after a complete withdrawal with Vygon devices (qimoharpoon and qimocap) and the competition devices.

2/ PROTOCOL

2.1 Tested devices

Vygon	
Qimoharpoon (7213.02)	Qimocap (7219.02)
	
Qimo σ (7210.91)	
	

Company A	Vial Adaptor		Syringe Adaptor	
Company B	Vial Adaptor 1	Vial Adaptor 2	Syringe Adaptor 1	Syringe Adaptor 2
Company C	Vial Adaptor		Syringe Adaptor	



2.2 Method

10 vial adaptors of each reference are placed on 10 vials. A single complete withdrawal is performed on each vial.

The same syringe, fitted with a closed connector is used for the 10 vials of each kind of device.

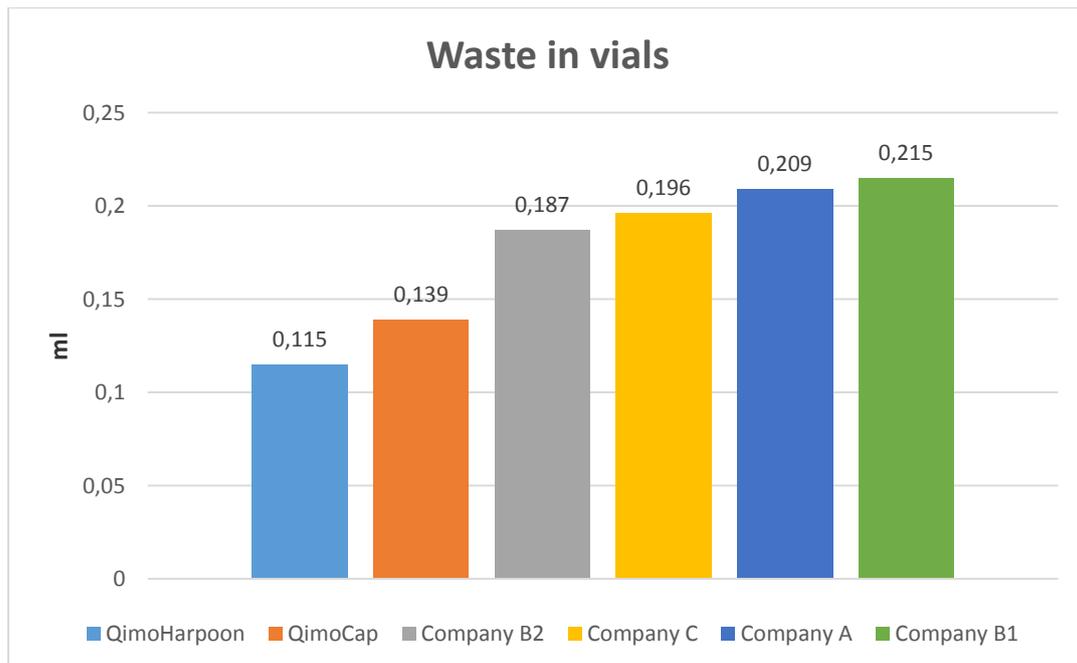
The steps of the tests are:

- 1- Weigh the empty vial (vial of 50ml capacity, diameter 20mm) +septum + alu cap.
- 2- Fill the vial with 30ml of water (with a 60ml non-protected syringe)
- 3- Crimp the vial and insert the vial adaptor
- 4- Connect the safe male connector to the syringe in accordance with the vial device. Except for qimoharpoon and company B vial adaptors 1 and 2, withdraw 30 ml of air before screwing the connector to the syringe.
- 5- Connect the syringe to the vial adaptor.
- 6- Withdraw all the liquid present in the vial
- 7- Remove the vial adaptor from the vial
- 8- Weigh the vial
- 9- Transposition weight/volume (1g = 1ml)

2.3 Acceptance criteria

The amount of liquid remaining in the vial after the complete withdrawal must be strictly lower with VYGON devices (qimocap & qimoharpoon) than with the alternative devices.

3/ RESULTS





4/ DISCUSSION

On average, the leftovers in the vial with competition devices vs QimoCap are:

- 50% higher with Company A
- 55% higher with Company B1
- 34% higher with Company B2
- 41% higher with Company C

On average, the leftovers in the vial with competition devices vs QimoHarpoon are:

- 82% higher with Company A
- 87% higher with Company B1
- 62% higher with Company B2
- 70% higher with Company C

Whatever the competition device used, the volume of leftovers in the vial is at least 34% higher than the volume left with a qimono device.

QimoHarpoon is the most effective in terms of minimum leftovers in vials thanks to his sampling whole located very close to the septum of the vial.

Example:

Price of Cabazitaxel 60mg/1.5 ml Sol inj = 2806€/ml

Using QimoHarpoon vs Company A: **Saving of 0,094 ml that is to say 263,78€ per vial.**

CONCLUSION

Qimono vial adaptors qimoharpoon and qimocap allow the users to withdraw more liquid than the other competition devices we tested. So these two very safe devices present also an important medico-economic advantage and can thus be a very good indication for expensive drugs (ex: cabazitaxel, monoclonal antibodies ...).