TEVADAPTOR® CLOSED-SYSTEM NOVEL DESIGN : FLOW SEPARATION, HOMOGENIZATION AND ERGONOMIC ASSESSMENTS ON THE NEW CHEMFORT™ TRANSFER DEVICE

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INTRODUCTION

In case of an **urgent chemotherapy request** during a shift in our hospital, the pharmacy intern reconstitutes the drug at Cytotoxic Preparation Unit, on the bench, using a **closed-system transfer device**.

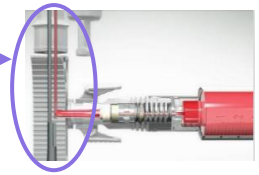
Before change : Tevadaptor® range

Presence of a **clamp** : **avoids the drug diffusion** through the tube during its injection into the infusion bag

After change : Chemfort™ range

Transfer device **shortened**
Clamp removed

New system of **2 internal channels** allowing **the flow separation**



OBJECTIVES

1. To test the **independence of the flows** during the use of the new Chemfort™ design = **non-diffusion of cytotoxic products into the tube**, despite the absence of a clamp
2. To observe that the infusion bag is **properly homogenized** before administration
3. To assess the **ergonomic improvements** brought by the new system, in order to decide whether it should be used in our center

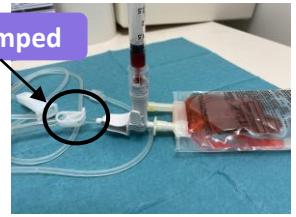
MATERIAL AND METHOD

Comparison between the old Tevadaptor® system and the new one Chemfort™ :

- **Simulation** of the **drug dissolution** with a **colored marker** (eosin)
- **Observation of the colored liquid flows** during the injection between the syringe and the infusion bag, and then after homogenization
- **Assessment of the ergonomic progress** of the new range

RESULTS

1 Diffusion of the colored marker towards the tube ?

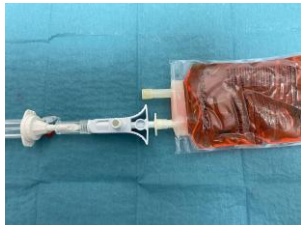


Tevadaptor®

Chemfort™

No diffusion of the colored marker through the tube

2 Chemfort™ : homogenization ?



After homogenization, the colored marker does not diffuse into the tube

3 Chemfort™ : ergonomic assessment ?

Suppressing the clamping step allows a convenient handling and reduces preparation time

DISCUSSION - CONCLUSION

1. The absence of a clamp on the new Chemfort™ design **is not an issue for the drug diffusion** out of the infusion bag : **flow separation is confirmed**
2. The new design ensures the **correct homogenization** of the drug in the infusion bag
3. **Forgetting to clamp the tube** before the product injection with the old Tevadaptor® model was a risk for the patient to be exposed to a **bolus effect** and for the nurse to a **cytotoxic drug exposure**. The new Chemfort™ model **avoids this hazardous step**

Easy to use and more ergonomic than the Tevadaptor®, it was decided to list the new Chemfort™ model in our center, following a review of our internal procedures.

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