Preparation of 5-Fluorouracil elastomeric devices : does Facilimix® make life easier ?

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Introduction

Our unit production prepares about 150 5-Fluorouracil (5Fu) elastomeric devices (Folfusor®, Baxter) per month, but…

During the compounding process, operators report difficulty in filling, due to the pressure required to fill the elastomeric reservoir.

We tested a semi-automatic preparation device, the **Facilimix® (Becton Dickinson)** in order to reduce the risk of MusculoSkeletal Disorders (MSD)
➔ Portable system to assist with withdrawing and injection requiring the use of captive syringes

Assess the satisfaction of the operators in terms of
- **Ease of use**
- **Safety**
- **Time saving**

Method

- Evaluation form:
  - Accuracy of withdrawing and filling
  - Ergonomics of the Facilimix ®
- Self-questionnaire OSHA (Occupational Safety and Health Administration)
  - Adapted version
  - Quantifiying the risk of MSD
- Preparation times were measured by extracting the corresponding video sequences.

Results

The trial lasted 6 days — 28 Folfusor® were prepared by 4 préparateurs

Benefits

- The ergonomics of the Facilimix ®: compact and easy to handle (weight <1kg)
- The MSD evaluation focused of 4 items ; each item being scored from 1 à 7 (7 being the worst score)

1) Repetitiveness
2) Manual effort
3) Awkward postures
4) Skin overpressure

	Manual preparation	Semi-automated preparation
Average total score	22/28	**10/28**

The risk of MSD is therefore reduced by using Facilimix®

- The speed of withdrawal and injection was also appreciated (75% of operators)

Disadvantages

- The push button was too sensitive during withdrawal (100% of operators)

- The average preparation time was 10 minutes, identical to that of manual
  ➔ The lack of difference is linked to the handling of the captive syringes wich counterbalances the faster withdrawal/injection speed
- 50 % of operators noted leakage of 5Fu at the luer-lock tip of the captive syringe during disconnection between the captive syringe and the spike of the vial
  ➔ 20 elastomeric devices/28

Discussion/conclusion

The use of the Facilimix® made it easier and less restrictive to fill the elastomeric devices, but with no final gain in handling time. The repeated observation of cytotoxic leakage during syringe-spike connection/disconnection was the major factor that led to the trial being stopped. Corrective measures by the supplier on this issue are essential before considering its routine use. In addition, the announced cost of the captive syringes may also be an obstacle to its acquisition..