


INTRODUCTION

 2021: **13.9%** increase in our production of chemotherapies
→ Research of a solution to face it and fluidify the circuit:



Dose banding (DB): doses of injectable anticancer drugs calculated on the body surface area are rounded up or down to a pre-determined standard dose.

It allows to prepare in advance the molecules whose stability is sufficient.

2 methods

Use of ready-to-infuse bags
(RIB)

Manufacture of standardized
dose batches (SDB)

OBJECTIVE

Evaluate the relevance of the implementation of dose banding by these 2 methods for **gemcitabine** in our hospital

MATERIALS AND METHODS

Analysis of the **reglementary context** of DB (Good Manufacturing Practices) and of the **equipments** needed

Extraction of **gemcitabine prescription in 2021** via **CHIMIO**[®]

→ To select **dose range** for standardization

→ And to use the **GERPAC dose banding tools**¹ (ADoC, ADoST, Detal, OSS)

Comparison between **RIB** and **SDB**:



- Estimated **cost of materials and products** for preparation
- **Preparation time** : gemcitabine bag (data from DRUGCAM[®]) vs time to insert a tubing on a RIB
- Necessary **adaptations on CHIMIO**[®]

RESULTS



Regulatory context and equipment:

- **RIB** : no ajustement or new equipment require
- **SDB** : complex status between magistral and hospital pharmaceutical preparation, require the purchase of an **analytical control machine**




In 2021 : **1348 bags** of gemcitabine were prepared in our unit

Dose banding ranges selection (corresponding to the gemcitabine RIB):

Standardized dose (mg)	Dose ranges (mg)	Maximum deviation (%)
1200	[1125-1299]	7.62
1400	[1300-1499]	7.69
1600	[1500-1699]	6.67
1800	[1700-1899]	5.88
2000	[1900-2099]	5.26
2200	[2100-2300]	4.76

- Using these ranges : **93% of gemcitabine prescriptions** could have been **standardized**
- **ADoC and ADoST** tool **confirmed** these results
- **Detal** tool showed that we could have made **batches from 6 to 31 bags with the SDB**

Comparison results

	RIB	SDB
 Cost in 2021	36 405 €	18 866 €
 Time	45 seconds	255 seconds
 CHIMIO [®]	6.0 version	Purchase of a specific dose banding module

SDB would entail **important financial and organizational investments** while the current activity does not allow us to make large batches. **RIB** do not provide direct savings, but the **time saved** would benefit the rest of our activity.

CONCLUSION



We have decided to use **gemcitabine RIB** in view of its ease of implementation compared to SDB. RIB also reduce the risk of infection, preparation errors, medicine waste, patient waiting time and make the circuit safer.

SDB could be considered if the activity continues to increase, to extend the DB to **other eligible molecules**.

Reference :

¹: Humbert M. Anticancer drugs preparation at hospital: proposition of tools to help in the implementation of dose banding, GERPAC conference

Abbreviations : ADoC = Analyse des Doses de Chimiothérapie / ADoST = Analyse des Doses Standardisées / Detal: Détermination de la taille des lots / OSS: Outil de Simulation des Stocks