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## Background

The non-administration of cytotoxic preparations contributes significantly to the drug waste and its cost in the Centralized Cytotoxic Preparation Units (CCPU). Monitoring and proper management of returns of preparations could reduce drug wastage.

The aim of this study was to analyze the reasons of returns and quantify the reused cytotoxic preparations before and after the implementation of corrective measures.

## Material and methods

A prospective study was conducted at our Hospital Pharmacy of the National Institute of Oncology over two 8 months periods (January to August of 2018 and 2019).

Data on the reasons, content and fate of returns were collected and analyzed by Excel software. (Figure 1)

## Results

At the end of the first period, 125 preparations corresponding to 90 prescriptions were returned.

Absence of patient was the most common reason (56%), followed by crystallization of product (19%), mainly Taxanes. Docetaxel was the most returned preparation (17.6%) (Figure 2,4).

The corrective measures taken were: optimization of communication between the CCPU and clinical services, strict dilution of Taxanes and Etoposide in glass vials and updating of physico-chemical and microbiological stability sheets for cytotoxics.

During the two study periods, we found a similar number of returns (0.6%) corresponding to 15851 € and 16874 €. The absence of the patient, the most frequent reason in the two periods decreased from 56% to 40%. The reasons of product crystallization decreased considerably (19% vs. 2%) (Figure 3,4).

The number of reassigned preparations increased from 2.4% to 7%.

These reusing corresponded to 64 € and 2760 € respectively for period 1 and period 2.

Figure 1 : Data collection table

Date of preparation	Date of return	Time of return	Conditions of conservation of preparation	Prescription number	Patient's name	Product name (INN)	Dosage of product	Causes of returns					Pharmaceutical decision		
								Prescription Error	Absence of The patient	Adverse clinical status of the patient	Double preparation	Crystallization of The product	Destruction of preparation	Reallocation of preparation	

Figure 2 : percentage of reasons of returns :Period 1

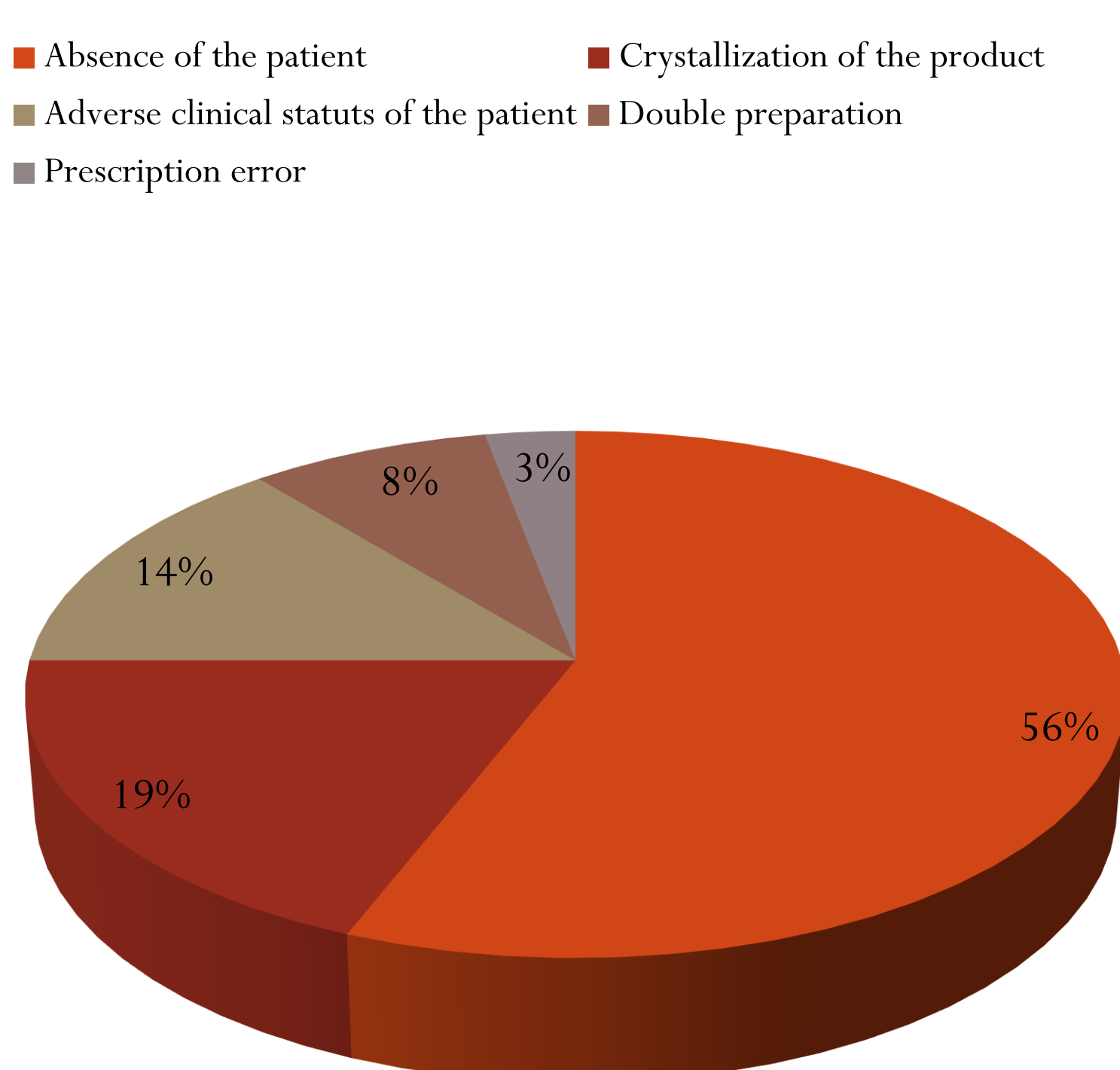


Figure 3 : Percentage of reasons of returns : Period 2

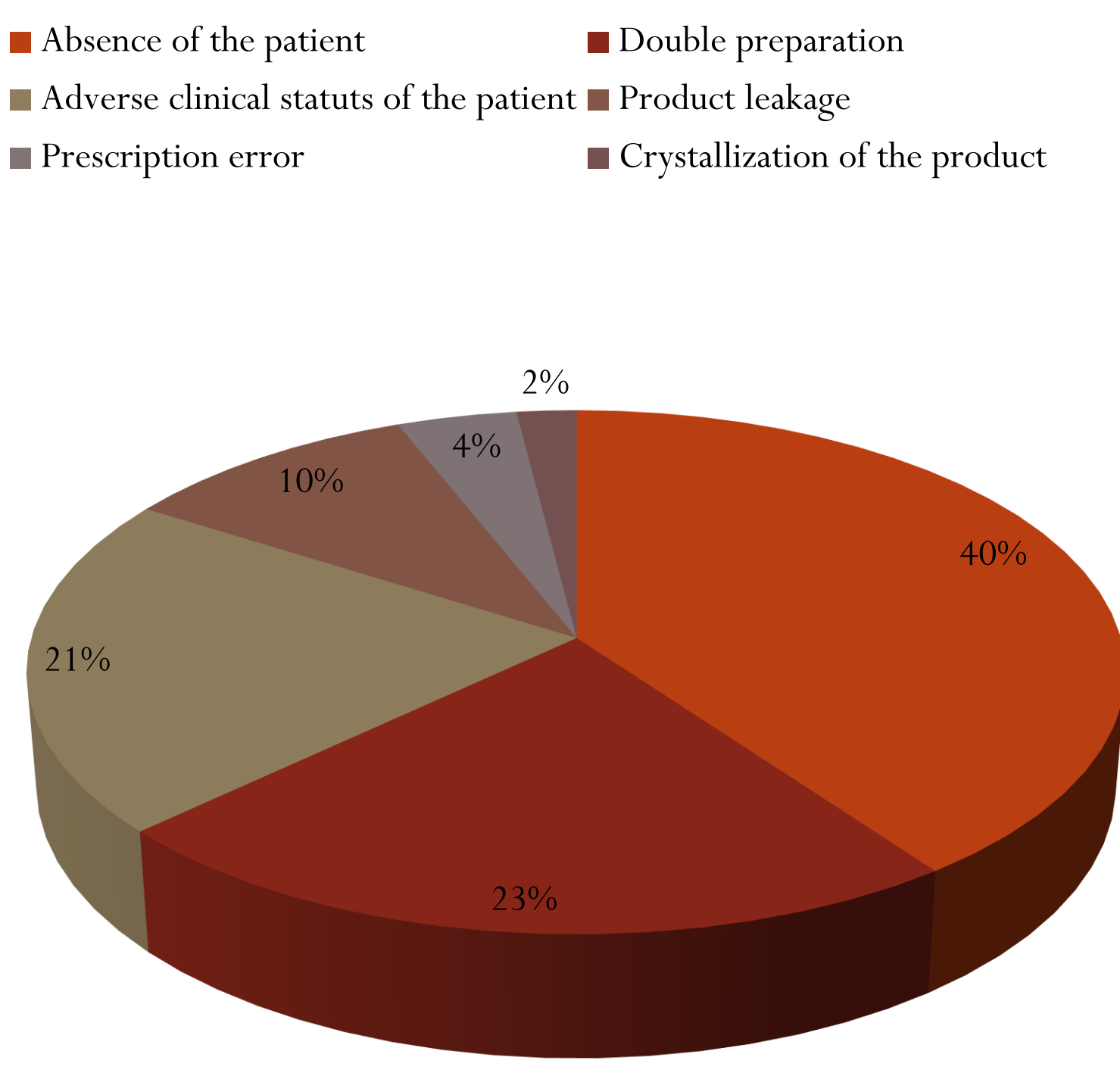
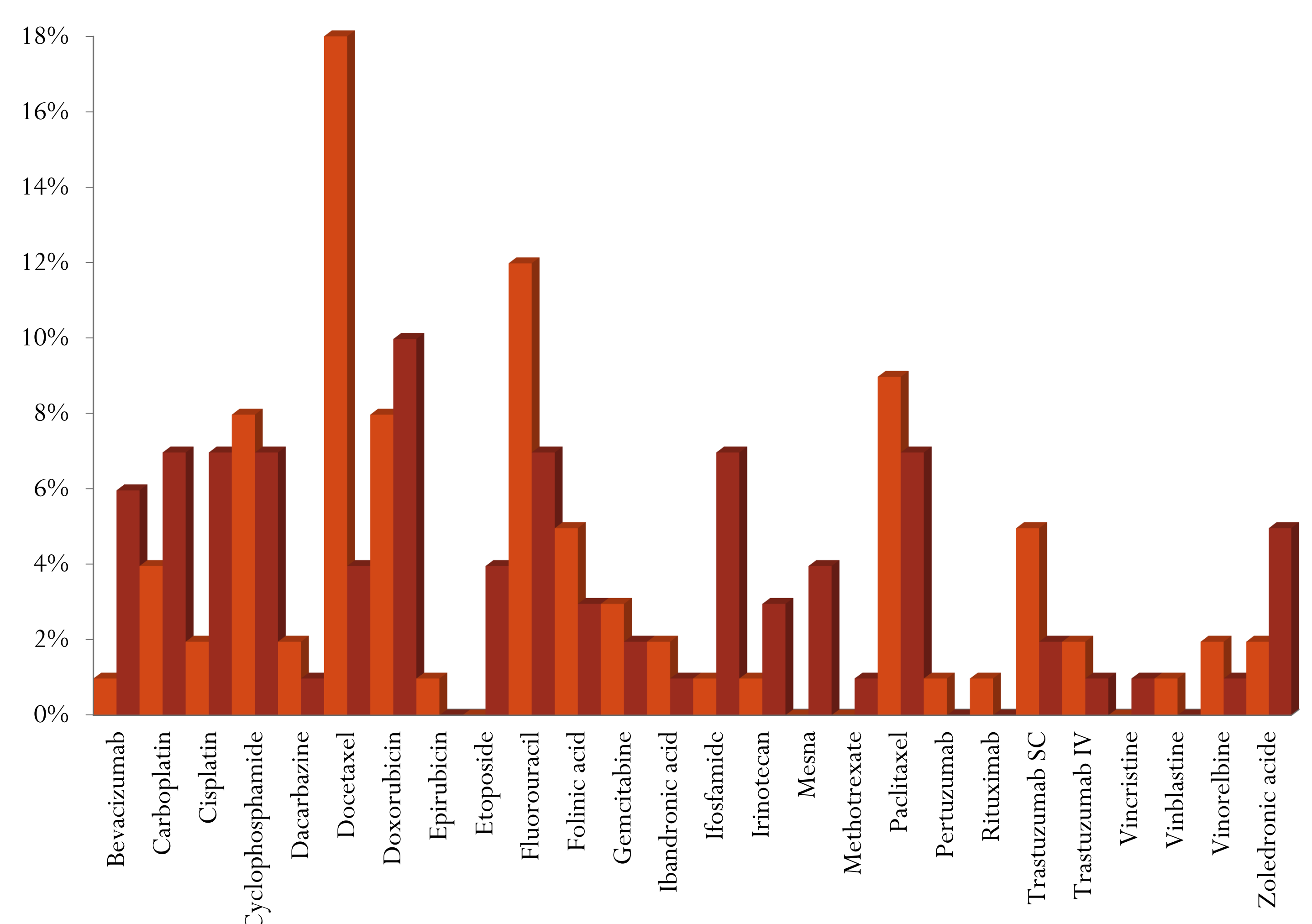


Figure 4 : Percentage of returned preparations between the two periods



## Conclusion and relevance

This study found a high number of preparations returned due to Taxanes crystallization through interactions containing-content.

The updating stability data of anticancer drugs used in our hospital based on recent international guidelines and follow-up of chemotherapy preparations had a significant impact on reasons and cost of returns.

Vigilance of pharmacists is required when validating prescriptions in order to minimize the avoidable causes of chemotherapy wastage and to make savings.

## References

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