Cyclophosphamide Reconstitution Practices in Portuguese Hospitals

Inês Ferreira [1*], Joana Vilar [2], Ana Isabel Oliveira [3], Fernando Moreira [3]

[1] *Escola Superior de Saúde, Instituto Politécnico do Porto, Rua Dr. António Bernardino de Almeida, 4200 - 072, Porto, Portugal*
[2] *Unidade Local de Saúde Gaia/Espinho, Serviços Farmacêuticos, Rua Conceição Fernandes s/n, 4434-502 Vila Nova de Gaia*
[3] *REQUIMTE/LAQV, Escola Superior de Saúde, Instituto Politécnico do Porto, Rua Dr. António Bernardino de Almeida, 4200-072 Porto, Portugal*
** 10200473@ess.ipp.pt*

Background: Cyclophosphamide is a widely used cytotoxic agent in the treatment of oncologic and autoimmune diseases [1]. Pharmacy professionals have identified it as one of the three most frequently prepared cytotoxic agents, underscoring the need for a thorough understanding of its safe handling [2].The absence of harmonized guidance contributes to variability in hospital practices, with potential implications for product quality, occupational safety, and therapeutic effectiveness [3]. **Aim:** This study aims to characterise the preparation and handling practices of cyclophosphamide amongst hospital pharmacy professionals. **Methods:** A cross-sectional observational study was conducted using an anonymous questionnaire administered to professionals with experience in cytotoxic drug handling. Data were statistically analysed using descriptive methods. **Results:** A total of 59 professionals participated in the study, of whom 44 (73%) currently perform cytotoxic drug preparation. Sodium chloride was identified as the most frequently employed solvent for reconstitution and dilution, as reported by 36 (60%) and 53 (88%) participants, respectively. Manual agitation was reported by 36 (60%) participants, whereas heating was rarely used, reported by 5 (9%). Syringe-spike systems were the most used devices, reported by 46 (77%) participants. The majority of participants (67%) reported that the preparation occurred predominantly in Class II type B2 biological safety cabinets, reflecting concerns for both operator and product protection. A defined time interval of 24 hours between preparation and administration was reported by 35 (58%) participants, with refrigerated storage reported by 34 (56%). Analytical controls were not implemented in 51 (85%) practice settings, and stability studies were unavailable in 35 (58%). Furthermore, 31 (52%) participants reported uncertainty regarding material compatibility. **Conclusions:** The findings indicate considerable heterogeneity in the methods of preparing cyclophosphamide, underscoring the need for harmonised procedures and targeted professional training to enhance standardisation and improve patient safety and occupational protection during cytotoxic drug handling in hospital settings.

Keywords: Cyclophosphamide; compounding practices; drug stability.

Acknowledgments
This work was supported by the PT national funds (FCT/MECI, *Fundação para a Ciência e Tecnologia and Ministério da Educação, Ciência e Inovação*) through the project UID/50006/2025 DOI 10.54499/UID/50006/2025 – *Laboratório Associado para a Química Verde – Tecnologias e Processos Limpos*.

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