Mirjana BOŠKOVIĆ, Vesna PUTIĆ, Mirjana ANTUNOVIĆ

MILITARY MEDICAL ACADEMY, BELGRADE, SERBIA

Centralized preparation of cytotoxic medication

Key words: centralized aseptic preparation, cytotoxic waste, isolator, monitoring, pharmacoeconomic analysis

Introduction: The preparation of cytotoxic drugs involves the reconstitution of commercial drugs. Reconstitution in Serbia is usually performed at clinics in uncontrolled conditions. Disadvantages of such an organization lead to impairment of the sterility and quality of the applied drug, inadequate protection and disruption of the health of medical personnel, lack of documentation on the preparation and control of the medicinal product and the possibility of irrational drug consumption. Centralized preparation of *iv* antineoplastic therapies represents aseptic reconstitution of these drugs under strictly controlled conditions, in specialized laboratories (BSC cabinets, insolators) of a pharmacy in one place for the needs of all oncological patients in one hospital. Developing awareness of the importance of controlled preparations has led to the development of equipment in which reconstitution is carried out under the supervision of professional staff.

Methods: The four-year experience of centralized preparation in a laboratory for the centralized preparation of oncology infusion therapy in the Military Medical Academy is presented through analysis of the aspects of the safety of therapy preparation and contamination control as a result of the use of multidrug packing infusions of oncology drugs available on the market and the application of safe systems for the preparation and administration of *iv* therapy**.** Isolators are systems that are supplied with filtered air through HEPA filters. The system is under constant positive or negative pressure with turbulent air flow. The device automatically enters the safety mode if leaks occur, which intensifies the internal air circulation and causes the device to sub-write. This prevents the outgoing contaminated air from escaping, which could jeopardize the operator.

Work in the isolator provides better control of the cytotoxic waste, as the waste is immediately stored in special bags without contaminating the space outside the isolator.

By monitoring and recording the daily consumption of all drugs prepared in the isolator within the centralized preparation for the treatment of patients at the Oncology Department for Gastroenterology for a period of 6 months, the efficacy of medicines without residue and the production of waste was measured. A comparison was made with respect to the preparation of medications as it would be in a department where there are no preconditions for preserving the drug solution for more than 24 hours. This all leads to a significant drop in the remnants of drugs that endangers the safety and produces significant quantities of hazardous waste, and therefore significant material wastage.

Conclusion: Preparation of the drug in such units ensures dosage accuracy, preservation of sterility, reduced staff exposure and stability of the drug under real clinical conditions. By preparing more therapies of the same drug, it allows the use of multidose packagings, which allows less waste and waste with significant financial savings. The pharmacoeconomic analysis of half-yearly preparation in a centralized unit for the aseptic preparation of cytotoxic therapy for the needs of only one clinic at the MMA confirmed the above-mentioned facts.

REFERENCES:

1.Role of pharmacists in optimizing the use of anticancer drugs in the clinical setting Integrated Pharmacy Research and Practice 2014:3 Carolyn SJ Ma Department of Pharmacy Practice, Daniel K. Inouye College of Pharmacy, University of Hawaii at Hilo, Honolulu

2.Cytotoxic Drugs Departments as a precondition for high-quality productStudia Medyczne 2014; 30 (2): 118–122 Katarzyna Głuszek Holycross Cancer Centre, Kielce, Poland Head of Centre: Stanisław Góźdź MD, PhD

3.Safe handling of cytotoxics: guideline recommendations Current Oncology—Volume 22, Number 1, February 2015 e