

# STUDY OF VACUUM BLOOD COLLECTION SYSTEMS

Ivanov S. N., Diadiun T. V.

National University of Pharmacy, Kharkiv, Ukraine

trunovacommodity@gmail.com

**Introduction.** The last years clinical practice has been introduced with a large amount of modern technologies. In this regard significantly has grown the role of laboratory tests in diagnostics and treatment effectiveness of various diseases. Doctor's critical decisions on patient care are often grounded on laboratory data. With this in mind, a priority task of contemporary clinical practice is provision of high quality and reliability of laboratory tests' results.

**Aim.** To carry out the study of vacuum systems for blood collection represented in the market of Ukraine. To analyze the structure of these systems and the principle of operation.

**Materials and methods.** Objects of the study were vacuum systems for blood collection, registered in the State Register of medical devices and medicinal products.

**Results and discussion.** Officially in the State Register of medical devices and medicinal products there is one complex system for blood collection registered (SC Sanguis Counting Kontrollblutherstellungs- und Vertriebs GmbH, Germany). Also in the Register there are parts such as needles, vacuum tubes and tourniquets. Needles for blood collection are represented by 3 samples, manufactured at 2 enterprises: in Great Britain (Becton Dickinson and Company, UK) and China (Weihai Hongyu Medical Devices Co., Ltd, P.R. China). Also in the Register there are 2 types of vacuum tubes produced by 2 enterprises: in Slovenia (Laboratorijska tehnika Burnik d.o.o., Slovenia) and China (Weihai Hongyu Medical Devices Co., Ltd, P.R. China). Vacuum system for blood collection consists of three parts: vacuum tube, holder, needle.

The vacuum system operation principle is as follows, under the action of vacuum blood is sucked directly from the vein through the needle to the test tube and immediately mixed with chemical agent. Precisely dosed vacuum volume provides exact ratio blood/reagent in the test-tube. They meet international standard ISO 6710-2011 for vacuum tubes for blood collection. Standard needle for blood collection is produced in various sizes that can be determined by the cap color (diameter 0,9mm – yellow, 0,8mm – green, 0,7mm – black). The system is produced ready to use and requires no preliminary preparation and reagents dosing.

**Conclusions.** Thus, we can conclude that vacuum systems are a convenient way to take blood samples that significantly accelerates and facilitates analysis process and also helps saving on secondary plastic test-tubes due to direct use of the system as a primary test-tube.