МЕДИЦИНСКИ УНИВЕРСИТЕТ - ВАРНА
„Проф. д-р Параскев Стоянов“
Ул.“Марин Дринов“ 55, Варна 9002, България
Тел. : 052/ 65 00 57, Факс: 052/ 65 00 19
e-mail: uni@mu-varna.bg, www.mu-varna.bg

MEDICAL UNIVERSITY - VARNA
“Prof. Dr. Paraskev Stoyanov”
55, Marin Drinov Str., 9002 Varna, Bulgaria
Tel.: +359 52/ 65 00 57, Fax: + 359 52/ 65 00 19
e-mail: uni@mu-varna.bg, www.mu-varna.bg

Fund “Nauka” Project № 19015 Resume – Competition-Based Session 2019:
“Methods for preparation of autologous platelet concentrates and their quantitative and qualitative characterization”
Project leader: Prof. Dobri Lazarov Ivanov, PhD

The aim of the present study is to analyze the blood components and major proteins in autologous platelet-rich plasma concentrates using various protocols under diverse conditions.

In order to achieve the goal, it is necessary to perform the following tasks. To analyze the blood components in autologous platelet rich plasma (PRP) obtained by experimental protocols for their preparation. In collected PRP samples, we intend to evaluate the content of basic proteins (PDGF-AB-platelet-derived growth factor AB, TGF β1-transforming growth factor β1, IL-8-interleukin-8). The next task is to activate the obtained PRP product and subsequently to determine the amount of the proteins under the time factor.

The study will be conducted with healthy volunteers with age from 18 to 64 years that did not take any drugs in the last 14 days. Written informed consent is mandatory before drawing venous blood from each donor. The samples will be distributed for testing according to pre-set experimental production protocols, with variations of some parameters. Before and after activation the obtained autologous plasma will be examined by ELISA method for quantification of the content of PDGF-AB, TGF β1, IL-8.

The expected result is to derive an optimal experimental protocol for the production of PRP, in which there is a correlation between platelet enrichment and high levels of the studied proteins, which will find clinical application.

This project supported a scientific study related to methods for obtaining autologous platelet concentrates and their quantitative and qualitative characterization. Studies were carried out to establish the cellular composition and quantity of three proteins studied in platelet-rich plasma obtained by different methods. One of the most important contributions of the research is of an applied nature.

A proposal is made to apply specific PRP products according to their characteristics. This proposal is used and applied by specialists in different fields of

medicine in their outpatient practices. Contributions of an original nature were also presented, namely:

- For the first time in Bulgaria, an in-depth analysis was made on different classification systems in order to define the final product.
- For the first time in Bulgaria, a study was performed on the content of PDGF-AB, TGF beta 1 and IL-8 in different experimental protocols for PRP extraction,
- For the first time in Bulgaria, a proposal was made to standardize the procedure of platelet-rich plasma production.

The scientific research carried out served for the preparation of a dissertation, the successful defense of which was also used to occupy the academic position of "Chief Assistant" to the principal researcher.

As a result of the scientific research carried out within the scope of the project, two scientific articles were published. They can be used in a scientifically informative manner, as well as be used and cited by authors working in the specific field. There remain unpublished data presented in the dissertation, which have yet to be presented for use by the general audience.