

Study program: Integrated academic studies in medicine			
Type and level of the study program: integrated academic studies			
Course title: Transfusion medicine (M3-TRFS)			
Teacher: Radmila G. Jovanović, Svetlana I. Vojvodić, Zorana P. Budakov Obradović, Jasmina N. Grujić			
Course status: elective			
ECTS Credits: 3			
Condition: -			
Course aim The aim of this course is to acquaint students with: basic principles of modern transfusion medicine, place and role of health worker in the implementation of national blood program; national guides for clinical use of blood and blood products; transfusion laboratory diagnostics, modern methods in the field of transfusion medicine; ethical principles in transfusion medicine and place and the roles of transfusion medicine in the field of transplantation medicine.			
Expected outcome of the course: Students acquire knowledge about basic principles of transfusion medicine, blood donation motivational and educational activities, blood donor selection, criteria and guidelines for blood processing and testing. Transfusion laboratory diagnostics methods and its relationship with other fields of medicine. Ethical aspects of blood donation, tissue and organs, roles of transfusion medicine physician in the fields of transplantation medicine. Students should master skills of blood donor selection, clinical examination of donor and venepuncture; blood group typing, processing donated units, labelling products and conditions for storage. Perform compatibility tests after selection of blood products for clinical use, recommendations for blood distribution and transportation; Basic laboratory testing in perinatal care and immunohematology; testing donors blood to markers of transfusion transmitted disease: hepatitis B, hepatitis C, HIV and syphilis. HLA system: antigens, antibodies, methods for typing.			
Course description <i>Theoretical education</i> 1. History of transfusion medicine. Basic concepts and tasks of transfusion medicine and its relation to the other medicine disciplines. Transfusion medicine service organisation. 2. Ethical aspects of transfusion medicine. Legislation. 3. Blood donation: principles, organization in our country and worldwide, indications and contraindications for blood donation. 4. Selection of blood donors, laboratory and clinical examination, blood collection and adverse effects after blood donation. 5. Methods for blood preservation, blood collection bags, anticoagulants and optimal additive solutions, changes in preserved blood. 6. Special types of blood donation, adverse side effects during blood donation: autologous and apheresis procedures (plasmapheresis, cytopheresis). 7. Genetics and immunological basis in transfusion medicine: polymorphism of blood groups; erythrocyte membrane, blood group antigens and antibodies, antibody-antigen reaction, agglutination, hemolysis, immune response. 8. Complement system and its clinical significance in practice. 9. ABO Blood group system: antigens, antibodies, significance in transfusion medicine, anthropology and forensic medicine. 10. Rh blood group system: antigens, antibodies, significance in transfusion medicine and morbus hemolyticus neonatorum. 11. Other erythrocyte blood group systems: MNSs, P, Kell, Kidd, Duffy, Lewis, Lutheran and their significance. 12. HLA system: genetics, biochemical structure, antigens, antibodies, significance in transfusion medicine, tissue and organ transplantation, anthropology and diseases. 13. Platelet antigens, anti platelet antibodies and their clinical significance. 14. Leukocyte antigens, antileukocyte antibodies and their clinical significance. 15. Place, role and significance of transfusion medicine in transplantation medicine. 16. Basic laboratory testing in transfusiology (perinatal care, immunohematology). 17. Basic principles of selective/directed usage of blood products, storage, transport, labelling and standardisation of blood products. 18. Selection of blood for transfusion, cross matching. 19. Red blood cell transfusion: types, conservation, selection for transfusion and usage. 20. Platelet transfusion: basics in platelet physiology, preparation, conservation and therapeutic application. 21. Fresh frozen plasma and products from plasma: description, indications, contraindications, dosage and administration, different types of plasma, human coagulation factors, albumins, immunoglobulins. 22. Cryoconservation of blood cells, substitutes for blood. 23. Risks in blood transfusion. 24. Transfusion related adverse event and reactions. 25. Quality and safety in transfusion medicine, Good laboratory practice in transfusion medicine. 26. Transfusion transmissible diseases: posttransfusion hepatitis B and C, HIV and syphilis. 27. Transfusion therapy in pediatric patients. 28. Transfusion therapy in surgery patients. 29. Apheresis therapeutic procedures. 30. Transfusion therapy in obstetrics and gynecology. <i>Practical education: exercises, other forms of education, research related activities</i> 1. Introduction to blood donation principles, anamnesis/questionnaire, haemoglobin control, clinical examination, venepuncture, overcoming collapses, procedure of plasma and cytopheresis, autologous transfusion. 2. Immunology and serology of blood groups: methods for ABO blood group typing. 3. Rh blood group typing methods, variants of Rh D antigens (weak and partial D), significance of Rh system antibodies, post transfusion reactions and immunisation in pregnancy, immunological characteristics in morbus hemolyticus neonatorum. 4. Determination of other erythrocyte blood group systems: MNSs, P, Kell, Kidd, Duffy, Lewis, Lutheran. 5. HLA system: antigens, antibodies, methods for typing. 6. Medico legal aspects in transfusion medicine: paternity testing by means of blood group and HLA antigens. 7. Preparation of blood products: erythrocyte, platelet, leukocyte, fresh frozen plasma, cryoprecipitate, labelling, conservation, standardisation and quality control of blood products. 8. Pretransfusion testing and selection blood products for blood transfusion. 9. Genetics and immunological basis in transfusion medicine: direct and indirect antiglobulin Coomb's test, cold agglutinins, platelet and antileukocyte antibodies. 10. Detecting of transfusion transmissible diseases: posttransfusion hepatitis B and C, HIV and syphilis: methods and results assignement, analyzing algorithm.			
Literature 1. Klein HG, Anstee DJ, Mollison's Blood Transfusion in Clinical Medicine, 12th Edition, 2014			
Number of active classes			Other:
Lectures: 30	Practice: 15	Other types of teaching: Research related activities:	
Teaching methods: lectures and practical work			
Student activity assessment (maximally 100 points)			
Pre-exam activities	points	Final exam	points
Lectures	25	Written	20
Practices	25	Oral	30
Colloquium		
Essay			