

Academic Year/course: 2021/22

26751 - Transfusions in Medicine

Syllabus Information

Academic Year: 2021/22

Subject: 26751 - Transfusions in Medicine

Faculty / School: 104 - Facultad de Medicina

Degree: 304 - Degree in Medicine

ECTS: 4.0

Year: 5

Semester: First semester

Subject Type: Optional

Module:

1. General information

1.1. Aims of the course

The subject and its expected results respond to the following approaches and objectives:

The course is the first contact of the student with a specific therapeutic procedure that is not included in any of the compulsory degree subjects. This treatment is only discussed in the hematology course, but in a very circumstantial way.

The approach of the subject is to familiarize the student with transfusion therapy and to get to know the indications of the different components derived from human blood, as well as the possible risks and side effects.

The specific objectives are:

- Knowledge of the legal regulations governing transfusion in the European Union and therefore in our country.
- Knowledge of the immunological bases related to the clinical practice of transfusion.
- Practical knowledge in indications of the different blood components and basic knowledge about the donation of blood components.
- Knowledge of the main adverse effects of blood transfusion and alternatives to the use of blood components.
- Knowledge of the hemovigilance system and optimal use of blood components.
- Familiarization with new cell therapy procedures.

1.2. Context and importance of this course in the degree

This optional subject will contribute to acquiring knowledge about a part of basic in-hospital therapy in a large number of nosological processes and entities. It also opens the door to new procedures and routes of clinical research in cell therapy.

These concepts are not detailed in any other compulsory subject and provides a first-rate tool in the field of hospital therapy.

1.3. Recommendations to take this course

It is recommended to have passed the subjects of the first 3 grades courses (up to 6th semester).

2. Learning goals

2.1. Competences

Upon passing the subject, the student will be more competent to...

Know the legal regulations that regulate blood transfusion in the European Union and in our country.

Know the immunological bases of the compatibility of the blood components as well as the possible adverse reactions and risks associated with transfusion therapy.

Establish indications for the use of blood components in the different pathological circumstances that may arise in clinical practice, as well as establish alternative therapeutic measures to the use the blood components and optimize the use of these.

Know the basic process of the transfusion and define its phases.

To be able to identify serious adverse effects of haemosubstitution therapy and establish early therapeutic measures that minimize the risk of iatrogenesis in the clinical process of transfusion, as well as notification of said adverse effects to the competent authority.

Knowledge of the concepts on optimal use and the measures to fulfill these criteria.

Basic knowledge of the use of blood products in cell therapy.

2.2. Learning goals

The students, to pass this subject, must demonstrate the following results...

Know the legal regulations that regulate blood transfusion in the EU and therefore in our country.

Know the basic notions of immunohematology that govern the safety of transfusion therapy in relation to compatibility of blood components.

Be able to establish the indication for transfusion of any of the blood components.

Carry out the basic checks of the transfusion process to guarantee the maximum safety of a therapeutic procedure frequently used in hospital activity.

Being able to detect, treat and report adverse effects and/or transfusion errors produced in the transfusion act.

Acquire sufficient knowledge to comply in the most appropriate way with the European standards on Optimal Use of blood components.

2.3. Importance of learning goals

The learning results are important given that they give the student knowledge of a part of medicine that is not included in compulsory subjects of the degree and that nevertheless are fundamental in medical practice both in the hospital setting and in the scope of Primary Care, since the offers urgent referral mechanisms to Specialized Care.

3. Assessment (1st and 2nd call)

3.1. Assessment tasks (description of tasks, marking system and assessment criteria)

The student must demonstrate that they have achieved the expected learning outcomes through the following assessment activities.

The learning results obtained will be assessed through a final test consisting of a work that will deal with any of topics covered during the course. In addition, an evaluation of the subject must be carried out (with highlights and points to improve) both of the topics covered and of the teaching staff.

The qualification will be made from 0 to 10 points, and will represent 70 % of the final grade for the course.

Likewise, it will be necessary to attend the practices that will be carried out in the B.S.T.A. (Blood and Tissue Bank of Aragón) and in the Transfusion Service of the Lozano Blesa University Clinical Hospital.

Attendance will count for 30 % of the final grade for the course.

The qualification will be global. Only those works not presented are saved for the September call.

4. Methodology, learning tasks, syllabus and resources

4.1. Methodological overview

The methodology followed in this course is oriented towards achievement of the learning objectives.

The subject will be structured in 10 lecture room of 2 hours each, 5 practice sessions of 2 hours each and two laboratory session of 5 hours each that will be held in the Transfusion Service of HCU Lozano Blesa and in The Bank of Blood and Tissues of Aragon.

The content of the lecture room will be supported by a basic bibliography on Transfusion Medicine previously recommended and adapted to the level of knowledge of the student. Further information regarding the course will be provided on the first day of class.

In the practice sessions the students will work on case studies in which they will establish transfusion indications and will be trained in special situations of clinical practice.

The training will be completed with the laboratory session that will allow the students to know the processes of promotion, obtaining, fractionation and storage of the blood components as well as special therapeutic procedures of apheresis and obtaining hematopoietic stem cells.

4.2. Learning tasks

The program offered to the student to help him achieve the expected results includes the following activities (developed in

section 5.3 Program)

Teaching in person 45% 1.80 ECTS (45 hours)

Large groups (45%) 0.81 ECTS (20,25 hours) 10 lecture room with the following program (5.3)

Small groups (45%) 0.81 ECTS (20,25 hours)

Five Practsessionsions

Two Laboratory sessions:

Autonomous work 55% 2.20 ECTS (55 hours)

It is the student's autonomous work dedicated to the study and preparation of practical cases for presentation.

4.3. Syllabus

The course will address the following topics:

- Topic 1.- Transfusional Medicine: Concept, objectives and historical background.
- Topic 2.- Structure of Transfusion Medicine in Spain:

Current legislation, Blood Banks and Tissues, Hospital Transfusion Services and Hospital Transfusion Commissions.

- Topic 3.- Importance of the Blood Bank in transfusion safety:
- Importance of the Blood Group in Transfusion Safety. The donation, procurement, processing and distribution of blood components.
- Topic 4.- Importance of the Transfusion Service in Transfusion Safety:

Administration of blood components. Errors and adverse effects of transfusions.

- Topic 5.- Clinical Process of Transfusion:

Basic Immunohematology. Scientific Evidence and Clinical Guidelines for Transfusion.

- Topic 6.- Transfusion in special situations:

Anesthesia and Massive Transfusion. Transfusion in Neonatology and Hemolytic Disease of the Fetus and Newborn

- Topic 7.- Alternatives to Transfusion:

Procedures aimed at saving homologous blood. Predefined auto donation and other procedures. Apheresis Procedures. Erythropheresis. Therapeutic apheresis. Obtaining hematopoietic stem cells.

- Topic 8.- Transfusional therapy and hemostasis alterations:

Implications of hemostasis in the transfusion of blood components.

Indication of transfusion of plasma components.

- Topic 9.- Hemovigilance systems.
- Topic 10.- Quality Systems in Transfusion Medicine and Optimal Use concept.

Five Seminars with the following program:

- 1.- Transfusion Indications of RBC Concentrates
- 2.- Transfusion indications of fresh frozen plasma, plasma platelets, and blood products
- 3.- Practical seminar of alternatives to transfusion.
- 4.- Situation of Extreme Urgency and Massive Transfusion. Performance
- 5.- Information for the patient who will receive a Transfusion and Consent.

2 Laboratory sessions:

- 1.- Procedures in Blood Bank and Tissues of Aragon (BSTA)
- 2.- Transfusion Service Procedures (HCU Lozano Blesa)

4.4. Course planning and calendar

Calendar of face-to-face sessions and presentation of works

- Classes are considered: Lectures, Practice sessions, and Laboratory sessions.
- During the 9th semester of Grado, lectures will be taught from 4 pm to 7 pm (3 hours a week) on Wednesdays until the end of the program.
- The practice sessions will be held on the same schedule once the lectures have been completed.
- The laboratory sessions will be scheduled on the same day, each practice with a duration of 4 hours (16 to 20 hours).

- The programming of the practices can be consulted in the bulletin board of the 9th semester of Grado.
- Fundamental material for the study by the student will be on the website of the Ministry of Health and Consumer Affairs under the section of Professionals - Public Health - Transfusion Medicine.
- Teaching material of interest will be delivered in the first-class lecture to expand the basic knowledge to be collected in the lectures and seminars of the subject

For further details concerning the timetable, classroom and further information regarding this course please refer to the "Facultad de Medicina" website *titulaciones.unizar.es/medicina/" <https://medicina.unizar.es/quinto-curso#horario9>

4.5. Bibliography and recommended resources

The updated bibliography of the subject is consulted through the website of de library

<http://psfunizar10.unizar.es/br13/egAsignaturas.php?codigo=26751>