

Blood Transfusion

Code: 44437
ECTS Credits: 9

Degree	Type	Year	Semester
4317563 Transfusion Medicine and Cellular and Tissue Therapies	OB	0	1

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Teaching groups languages

To check the language/s of instruction, you must click on "Methodology" section of the course guide.

Teachers

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Prerequisites

Level B2 or equivalent in English.

Objectives and Contextualisation

This module is dedicated to blood transfusion, and in it the quality indicators of the different methods for the preparation of blood components will be studied. The indications for the transfusion, as well as the incidents and possible adverse effects.

The different alternatives to transfusion will be studied and therapeutic apheresis and plasma exchange will be studied in depth, as well as the use of plasma derivatives.

Competences

- Describe the selection processes of units of blood and blood components comparable with each clinical situation.
- Identify and analyse quality indicators in the various blood components production methods.
- Integrate scientific and technical knowledge in accordance with a commitment to ethics and the code of conduct.
- Take reasoned decisions based on critical, objective analysis.

- That students are able to integrate knowledge and handle complexity and formulate judgments based on information that was incomplete or limited, include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgments.
- That the students can apply their knowledge and their ability to solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study.

Learning Outcomes

1. Analyse quality indicators of blood components.
2. Describe the technical principles of apheresis.
3. Identify alternatives to blood transfusion.
4. Identify clinical conditions for the use of plasma derivatives.
5. Identify indications for transfusion.
6. Identify quality indicators from case studies.
7. Identify the fundamental concepts of European transfusion regulation and how they apply to daily practice.
8. Integrate scientific and technical knowledge in accordance with a commitment to ethics and the code of conduct
9. Recognise pathological conditions that are candidates for therapeutic apheresis.
10. Take reasoned decisions based on critical, objective analysis
11. That students are able to integrate knowledge and handle complexity and formulate judgments based on information that was incomplete or limited, include reflecting on social and ethical responsibilities linked to the application of their knowledge and judgments.
12. That the students can apply their knowledge and their ability to solve problems in new or unfamiliar environments within broader (or multidisciplinary) contexts related to their field of study.

Content

1. Introduction to transfusion medicine.
2. Pre-transfusion tests.
3. Indications for the transfusion.
4. Incidents and adverse effects of the transfusion.
5. Alternatives to the transfusion.
6. Indications for stable components.

Methodology

The methodology for this course is active and constructive. It does not only contemplate the content but also reading, reflecting and applying knowledge to reasonably close situation to create meaningful learning.

Students will work on real life examples and case studies, reflecting on complex and relatively unstructured situations to find adequate solutions.

Faithful to the proposed methodology, students form the centre of the learning process and generate knowledge by interacting significantly with their peers, with the teaching materials and with the environment. This programme not only teaches training in a virtual environment but also allows them to experience their learning every day.

At the beginning of the unit, the teacher will present a learning plan to the group with specific objectives, learning activities, the necessary resources and recommended deadlines for each activity.

The dates for carrying out the activities are recommended in order to be able to follow the course. The only fixed dates are the beginning and end of each teaching unit. This means that students can do their own planning, but they must respect the dates for the beginning and the end of each unit.

Students are recommended to work in a continuous and consistent manner and not allow tasks to accumulate around the deadlines, which may lead to haste, undue time pressure and not allow the students to enjoy their learning or carry out additional reflections. Also, the course offers group activities which require synchronisation among the group.

Some of the activities must be send online to the teacher for assessment and receive feedback of progress. Teachers will return the work with comments and together the students can continue to think and learn. The deadline for each of these activities is the end of the teaching unit. Other activities will consist in discussion and working together in shared spaces.

The primary language used during the course will be English. However, the use of Spanish will also be allowed. The course materials will also be in English.

Annotation: Within the schedule set by the centre or degree programme, 15 minutes of one class will be reserved for students to evaluate their lecturers and their courses or modules through questionnaires.

Activities

Title	Hours	ECTS	Learning Outcomes
Type: Directed			
Discussions	25	1	3, 5, 7, 8, 10, 11, 12
Type: Supervised			
Elaboration of Projects	15	0.6	1, 4, 7, 8, 10, 11, 12
Virtual Cases/Problem Solving	15	0.6	2, 3, 5, 8, 9, 10, 11, 12
Type: Autonomous			
Personal Study	25	1	1, 4, 7, 8, 11
Reading Articles/Reports of Interest/Videos	25	1	2, 3, 4, 5, 9
Test/Scheme	25	1	2, 3, 5, 9

Assessment

This module will be assessed on the following exercises:

1. Exercise 1. Individual work in which students review the situation of donation and transfusion in their own countries. The text should not exceed 900 words. This exercise counts for 10% of the final grade.
2. Exercise 2. Group work centred on the analysis of key points in a transfusion request. The text should not exceed 900 words. This exercise counts for 10% of the final grade.
3. Exercise 3. Individual multiple-choice test on indications of transfusion. This test counts for 10% of the final grade.

4. Exercise 4. Individual multiple-choice test on transfusion in special situations. This test counts for 20% of the final grade.
5. Group discussion on different national surveys on haemovigilance. Student contribution will count for 10% of the final grade.
6. Exercise 5. Group work focused on a specific transfusion procedure related to one of the special critical situations (to be chosen by the group). The text should not exceed 900 words. This exercise counts for 10% of the final grade.
7. Exercise 6. This exercise is in two parts: Individual multiple-choice test on therapeutic apheresis (8% of the final grade) and individual participation and comments in a forum on therapeutic apheresis (2% of the final grade).
8. Exercise 7. Individual work where students propose and develop at least three measures to improve self-sufficiency in stable blood components. The text should not exceed 900 words. This exercise counts for 10% of the final grade.
9. Exercise 8. Individual work in which students analyse a case on how to implement lean management in a transfusion service. The text should not exceed 900 words. This exercise counts for 10% of the final grade.

Single evaluation

1. Multiple choice test. Capacity to identify when a transfusion is indicated or not in each case and why.

This exercise counts for 10% of the final grade.

Single evaluation

1. Multiple choice test. Capacity to identify when a transfusion is indicated or not in each case and why. This exercise counts for 100% of the final grade. The same retrieval system as for the continuous assessment will be applied.

Assessment Activities

Title	Weighting	Hours	ECTS	Learning Outcomes
Exercises 3 and 4	30%	10	0.4	2, 5, 6, 8, 10, 11, 12
Exercise 1	10%	10	0.4	7, 8, 10, 11, 12
Exercise 2	10%	10	0.4	1, 8, 10, 11, 12
Exercise 5	10%	20	0.8	3, 8, 10, 11, 12
Exercise 6	10%	15	0.6	2, 3, 4, 5, 8, 9, 10, 11, 12
Exercise 7	10%	15	0.6	4, 8, 10, 11, 12
Exercise 8	10%	10	0.4	4, 8, 10, 11, 12
Student's Participation	10%	5	0.2	4, 8, 9, 10, 11, 12

Bibliography

Babia, F. Cuando llovía fuego. La Vanguardia (Supla), 2007 (Febrero 11).

Barrios, LF. Los aspectos legales de la transfusión. Ed. You & Us, S.A. Madrid, 2006.

Barbolla, L; Contreras E, Pujol M^a M. Manual práctico de medicina transfusional. p 19-37. FEHH. Madrid, 2002.

Carreras E et al. El Consentimiento informado. Guía de uso y elaboración de documentos (2^a ed.). AEHH, Madrid, 2001.

Guideline 2002/98/CE of the European Parliament and the Council, 27th January 2003, which establishes the quality and safety regulations for the extraction, verification, treatment, storage and distribution of human blood and its components.

Guideline 2004/33/CE of the Commission, 22nd March 2004, for which the Guideline 2002/98/CE of the European Parliament and the Council is carried out in certain technical requirements about blood and blood components.

Duran Jordà, F. The Barcelona blood-transfusion service. Lancet 233, 1939.

Duran Jordà, F. La transfusión de sangre citratada conservada. El problema de la dosis. Revista Sanidad de Guerra, 1937.

Duran Jordà, F. El Servei de transfusió de sang al front. Organització i utilitatge. La Medicina Catalana 1936.

Grífols Espés, J; Duran I Jordà, F. Un mètode, una època. Barcelona, Hemo-Institut Grífols, 1997.

Grífols Ronda, JR. Jeringa Jubé para Transfusión. Revista de la Sociedad Española de Transfusión Sanguínea, Vol. 45, Barcelona, 2002.

Grífols Ronda, JR. De oficio, barbero. Revista de la Sociedad Española de Transfusión Sanguínea, Vol. 55, Barcelona, 2005.

Grífols Ronda, JR. Una buena idea a destiempo suele ser una mala idea. Revista de la Sociedad Española de Transfusión Sanguínea, Vol. 68, Barcelona, 2008.

Grífols Ronda, JR. Author of the article Agote, Hustin o Lewisohn. Una polémica estéril. Revista de la Sociedad Española de Transfusión Sanguínea, Vol. 71, Barcelona, 2009.

Grífols Ronda, JR. Mortus est qui non respira... Revista de la Sociedad Española de Transfusión Sanguínea, Vol.21(4) nº74, Barcelona, 2009.

Grífols Ronda, JR. Ottenberg y la nueva era de la hemocompatibilidad. Revista de la Sociedad Española de Transfusión Sanguínea, Vol.21(1) nº75, Barcelona, 2010.

Judine S. La transfusion du sang de cadavre à l'homme. Gaceta Médica Española, 1932.

Law 41/2002, 14th November, basic regulation of the patient's autonomy, as well as rights and duties in the matter of information and clinical documentation.

Cortés, A. Medicina Transfusional en condiciones de trauma. Parte II Transfusión masiva. Colombia Médica 28, 1997:188-99.

Stainsby, S.; Mac Lennan, S.; Hamilton, P.J. Management of massive blood loss. A template guideline. British Journal of anaesthesia 2000; 85 (3):487-91.

Wendy, N. Massive blood transfusion in the elective surgical setting. Transfusion and apheresis science. 2002 Aug, 27 (1). 83-92.

Vasief, S.N.; Knudsen, N.W.; Neligan, P.J.; Sebastian, M.W. Massive transfusion exceeding 50 units of blood products in trauma patients. Trauma 2002 Aug; 53 (2) : 291-5.

Hellstern, P.; Haubelt, H. Indications for plasma in massive transfusion. *Thrombosis Research* October 2002, 107 (1): 519-22.

García Caballero, M.; Villagrasa, E.; Martínez Moreno, J.M. Guías para la reposición de las pérdidas sanguíneas en cirugía abdominal de urgencia. *Cirugía Esp* 2003; 74 (2). 62-8.

O'Connell, N.; Perry, D.; Hodgson, A.; Laffan, M.; Smith, O. Recombinant FVII a in the management of uncontrolled hemorrhage. *Transfusion* 2003 Dec; 43 (12)1711-16.

Urbina, A.; Peñuela, O. Transfusión de sangre almacenada, efectos colaterales. Universidad Nacional de Colombia. *Revista de la Facultad de Medicina* 2003; 51 (2) : 103-8.

N. Engl. J. Med. Safe study investigators. A comparison of albumin and saline for fluid resuscitation in the intensive care unit. 2004; 317.235-40.

Software

No specific software for this Module.