Escola Doctor Robert
Adscrita a la UAB

Blood Transfusion 2018/2020

Code: 1275
ECTS Credits: 10

Description	Type	Course	Semester
43317 Blood Transfusion	OB	1	1

Module Head Teacher

Name: Enric Contreras & Joan Ramon Grífols

Email: econtreras@bst.cat & jrgrifols@bst.cat

Use of languages

Principal working language: English (Eng)

Other comments on languages

Language will be English, although it is possible to do the communication in Spanish. The materials will be in English.

Teachers

Enric Contreras: Graduate in Medicine and Surgery (Autonomous University of Barcelona, 1979). He is a specialist in Hematology and Hemotherapy (Autonomous University of Barcelona, 1982). He has a degree of Research Sufficiency (Autonomous University of Barcelona 1997) and a Master's Degree in Hospital Management (ESADE 2008). He is also an associate professor at the Rovira i Virgili University of Tarragona (Department of Medicine and Surgery) and at the Universitat Autònoma de Barcelona (Department of Medicine).

Joan Ramon Grífols: Graduate in Medicine and Surgery (University of Barcelona, 1988). He is an specialist in Hematology and Hemotherapy (University of Barcelona 2002). He has a Master's Degree in Hospital Management (ESADE 1993 and 2008) and a certificate from the Université d'Enseignement Européen de Transfusion Sanguine. Université Louis Pasteur (1996).

Montserrat Sáez: Graduate in Medicine and Surgery (University of Barcelona, 1975). She is an specialist in Hematology and Hemotherapy (Autonomous University of Barcelona, 1980).

Prerequisites

It is necessary to have a level B2 of English or equivalent.

Objectives and Contextualization

In this module it will be reviewed the entire transfusion circuit focusing on the indication, optimization and use in special situations of the different blood components. The safety of blood administration and the prevention of adverse effects will be an important part of this analysis. In parallel, it will be studied the role of a Transfusion Service in performing therapeutic aphaeresis procedures and in the management of those stable blood components for therapeutic purposes.

Skills

- Be able to determine the profile of the patients to be transfused and to apply those measures that can assure the maximum quality and safety in the administration of blood components.
- Ability to assess the risk/benefit that implies a proper transfusion indication to a patient.
- Be able to act correctly in transfusion situations out of the ordinary that involve an in-depth knowledge of the patient's clinical situation.
- Select and treat patients according therapeutic aphaeresis procedures.
- Design proper strategies in the patient blood management in accordance with European regulations.
- Ability to work in multidisciplinary teams.
- Design and develop strategies to ensure the capability to detect and report incidents or errors associated with transfusion.

Learning outcomes

1. To analyze the basis of modern transfusion services.
2. To know the content of the main European legal regulation and standards relating to the donation and transfusion of blood components.
3. To analyze the flowchart of a blood component transfusion request.
4. To select blood components trying to minimize possible adverse transfusion reactions.
5. To define the basis for a correct indication of blood components.
6. To manage transfusions in special critical situations.
7. To know the most relevant international guidelines.
8. To obtain an overview of the transfusion process.
9. To train the professional on the transfusion approach of certain specific medical or surgical situations.
10. To identify the adverse effects of transfusion and their diagnosis and treatment.
11. To develop those corrective measures according to the transfusion incidents reported to an haemovigilance system in order to minimize their prevalence.
12. To assure an optimal patient care involving a combination of different blood management strategies.
13. To advise and manage preoperative patients in order to maximize hemoglobin levels to prevent anemia and optimize coagulation function to limit bleeding.
14. To minimize the inappropriate use of blood components and promote transfusion of the right component at the right time to the right patient.
15. To identify the fundamentals of therapeutic aphaeresis, the different methodology that can be used, their indications and possible adverse events.
16. To define the procedure to get safe plasma derivatives.
17. To identify clinical indications to use plasma derivatives.
18. How Lean Management can help a transfusion service.
19. What Lean is and is not.
20. Application of Lean to transfusion service.

Contents

Methodology

This course will follow an active and constructive methodology. It is not the content but remember to read and reflect and apply knowledge to situations reasonably close, creating meaningful learning.

Thus, work on real-life examples and case studies, reflecting on complex situations and little structured in order to find appropriate solutions.

Faithful to the proposed methodology, students like you are the centre of the learning process. Build knowledge significantly actively interacting with your peers, with training, with materials, with the environment. This program not only teaches about virtual training but also will live every day intensely from the experience.

At the beginning of the unit, the teacher will present to the board, including a proposal for planning learning with specific targets to be achieved in each of them with learning activities to be performed, the resources used and recommended dates for each work activity.

The dates for carrying out activities in nature are "recommended" to the proper tracking and use of the course. The only dates that are considered "immovable" are the beginning and end of UD. This means that students can follow their own planning as long as they respect the start and end dates.

It is recommended to try to operate continuously and do not let the tasks accumulate on date. For two basic reasons: firstly, accumulating tasks for a single date can lead to work in a hurry, overwhelmed by the time and not allow or enjoy learning or further reflections being carried out; moreover, the course provides activities in group dynamics, and to bring to fruition a cooperative work you need a minimum of temporal synchrony.

Some activities should be sent to the teacher so that they can be checked, along with you and your learning. Thus, the teacher will return your work commented so, together with him, you can continue reflecting and learning from each. The maximum deadline for these activities will be the final date of each UD. Other activities will be sharing, discussing and working together on shared spaces.

Activities

Title	Hours	ECTS	Learning outcomes
Type: Directed	50	2	
Moderated discussions through the Virtual Campus			5,7
Type: Supervised	75	3	
Virtual Case/Problem Solving			4
Elaboration of projects			2, 3, 6
Type: Autonomous	150	6	
Test/Scheme			3, 5, 7
Personal study			1, 8, 9
Reading articles/Reports of interest/Videos			1, 2, 3, 4, 5, 6, 7, 8, 9

Evaluation

The Module will be evaluated through:

1. Exercise 1: Individual work where the student will review his/her own's country donation and transfusion mode in no more than 900 words maximum length. This will be the 10% of the final score.
2. Exercise 2. Working group focused in the analysis of the key points in the transfusion request, blood component preparation and issuing in no more than 900 words maximum length. This will be the 10% of the final score.
3. Exercise 3. Individual multiple-choice test about Transfusion Indications. This will be the 3% of the final score.
4. Exercise 4. Working group focused in developing a specific transfusion procedure related to one of the special critical situations (to be chosen by the group) in no more than 900 words maximum length. This will be the 10% of the final score.
5. Exercise 5. Individual multiple-choice test about Transfusion in special situations. This will be the 20% of the final score.
6. Discussion among the whole group about different Haemovigilance national surveys. The student contribution will be the 10% of the final score.
7. Exercise 6. Working group focused in developing a specific transfusion plan to minimize blood use in a hospital (to be proposed by the coordinator) in no more than 900 words maximum length. This will be the 10% of the final score.
8. Exercise 7. Individual multiple-choice test about Therapeutic Apheresis. This will be the 8% of the final score. Individual participation and appropriate comments to the Therapeutic Apheresis forum. This will be the 2% of the final score.
9. Exercise 8. Individual work where the student will propose and develop at least three measures to improve self-sufficiency in stable blood components in no more than 900 words maximum length. This will be the 10% of the final score.

10. Exercise 9. Individual work where the student will analyze a proposed case of how to implement Lean Management in a Transfusion Service in no more than 900 words maximum length. This will be the 10% of the final score.

Evaluation Activities

Title	Weighting	Hours	ECTS	Learning outcomes
Exercise 1	5%	12.5	0.5	1, 2, 3
Exercise 2	5%	12.5	0.5	3
Exercise 3 & 4	5%	12.5	0.5	3, 4, 5, 6
Exercise 5	40%	100	4	6
Student participation	10%	25	1	7, 8, 9, 10
Exercise 6	10%	25	1	10, 11, 12, 13, 14
Exercise 7 & Student participation	10%	25	1	15, 16
Exercise 8	5%	12.5	0.5	17
Exercise 9	10%	25	1	18, 19

Bibliography

- ✓ Babia, F. Cuando llovía fuego. La Vanguardia (Supla), 2007 (February 11).
- ✓ Barrios, LF. Los aspectos legales de la transfusión. Ed. You & Us, S.A. Madrid, 2006.
- ✓ Barbolla, L; Contreras E, Pujol MªM. Manual práctico de Medicina Transfusion. p 19-
- ✓ 37. FEHH. Madrid, 2002.
- ✓ Carreras E et al.. El Consentimineto informado. Guía de uso y elaboración de documentos (2ª 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-transfusión service. Lancet 233, 1939.
- ✓ Duran Jordà, F. La transfusión de sangre nitratada-conservada. El problema de la dosis. Revista Sanidad de Guerra, 1937.
- ✓ Duran Jordà, F. El Servei de transfusió de sang al front. Organització i utillatge. 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 transfusión du sang de cadáver a 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.
- ✓ Cortes, A. Medicina Transfusional en condiciones de Trauma. Parte II Transfusión masiva. Colombia Medica 28, 1997:188-99
- ✓ Stainsby, S.; Mac Lennan, S.; Hamilton, P.J. Management of massive blood loss. A templade 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. Trombosis ResearchOctober 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 hemorrage. 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 albumina and salinefor fluid resuscitation in theintensivecareunit. 2004; 317.235-40