Facultat de Medicina
Plan Docent de la Asignatura 4: "Methods for diagnosis and identification of rare anaemias"
Màster en Competencies Mèdiques Avançades - Anemias Raras i síndromes relacionados

GENERAL DATA

Subject: 4. METHODS FOR DIAGNOSIS AND IDENTIFICATION OF RARE ANAEMIAS

Code:

Type: Optional

Schedule: To be defined

Departments involved: Medicine

Coordinator:
Joan-LLuis Vives Corrons (Departament de Medicina, Universitat de Barcelona, Unidad de Patología Eritrocitaria)

Academia:

1. Lydie Da Costa
2. Maria del Mar Mañú
3. Mayka sanchez
4. Celeste Bento
5. Philippe Connes
6. Lucia de Franceschi
7. Joan-Lluis Vives Corrons
8. Barbara de la Salle
9. Antonio Piga
10. Domenica Capellini
11. Thierry Peyrard
12. Achille Iolascon

Subject Coordinador: Domenica Capellini

Credits ECTS: 3

Subject total teaching time (in hours):75
- **Presential (teacher): 50**
- **Autonomous (student): 25**

TRANSVERSAL SKILLS

- Being able to interact with other medical specialists to advise them
- Ability to work in interdisciplinary teams and collaborate with other researchers together, act independently and use initiative
- Ability to teach and disseminate knowledge in the social environment in both expert and non-expert audiences, clearly and in different languages
- Ability to integrate knowledge and ways to deal with the complexity and formulate judgments based on limited information, but so thoughtful, considering social and ethical repercussions of the trials
- To keep up to date knowledge exposed in the field of the international scientific community, that is, to seek, obtain and interpret information obtained in biomedical databases and other sources
- Being able to know the principles of bioethics and medico-legal research and professional activities in the field of biomedicine

SPECIFIC SKILLS

- Knowing the fundamental and general basis for laboratory diagnosis of RBC defects , mainly due to enzymopathies, membranopathies and haemoglobinopathies.
- Know the most advanced and complementary laboratory diagnostic tests and specialized procedures for RBC defects approach.
- Be able to recognize, and properly interpret the abnormal laboratory data obtained from the study of the different RBC defects.
- To develop, implement and evaluate clinical practice guidelines for patients with erythropoietic failure of haemolytic anaemia due to RBC defects.

A. **General Objectives**

The main objective of the course is to help train clinicians and researchers in the field of quality major erythropoietic defects in a very well defined as a unit of care is an area of excellence for translational research. Erythropoietic defects represent a systemic problem with increasing incidence and high associated morbidity.

B. **Specific Objectives**

To know in depth the erythropoiesis and its defects, their etiological mechanism/s and their main clinical manifestations and research possibilities. Furthermore, to assess the results of clinical trials in the international development of new biological treatments cost-effectiveness studies.

Subject 4. Methods for diagnosis and identification of rare anaemias

Date	Topic	Chapter	Professor	Language
	4.1 The morphological examination of	4.1.1 RBC morphology and morphological studies (4h)	Lydie Da Costa	English
	4.2	4.2.1 Hemoglobinopathies (2h)	Maria del Mar	English
		4.2.2 Membrane defects (2h)	Maria del Mar Mañú	English
	4.3 Molecular biology for erythropoietic defects investigation (4h)		Mayka sanchez	English
	4.4 The protein electrophoresis	4.4.1 Electrophoresis different media at different pH values (1.5h)	Celeste Bento	English
		4.4.2 Capillary electrophoresis (1.5 h)	Celeste Bento	English
		4.4.3 Isoelectric focusing (1.5 h)	Celeste Bento	English
		4.4.4 Gradient gel electrophoresis (1.5h)	Celeste Bento	English
	4.5 High Performance Liquid Chromatography (HPLC) (4h)		Celeste Bento	English
	4.6 Physical properties of the RBCs (6h)	4.6.1 Erythrocyte deformability (2h)	Philippe Connes	English
		4.6.2 Transmembrane ion permeability (2h)	Lucia de Franceschi	
		4.6.3 Ektacytometry and RBC deformability (2h)	Philippe Connes	English
	4.7 Assessment of RBC	4.7.1 Automated hematology analyzers (2h)	Joan-Lluis Vives Corrons	English
		4.7.2 Quality control procedures (2h)	Barbara de la Salle	English
	4.8 Image analysis for the diagnosis of rare anemias (4h)	4.8.1 Abdominal ultrasound (1h)	Antonio Piga	English
		4.8.2 Magnetic resonance (MR) (1h)	Domenica Capellini	English

		4.8.3 Computed axial tomography (CAT) (1h)	Domenica Capellini	
		4.8.4 Echo-Doppler ultrasound (1h)	Antonio Piga	English
	4.9 Blood transfusion in rare anemias (10h)	4.9.1 Rare blood groups (2h)	Thierry Peyrard	English
		4.9.2 Plasma exchange (2h)	Lucia de Franceschi	English
		4.9.3 Incompatibilities (2h)	Thierry Peyrard	English
		4.9.5 Iron overload and chelation therapy (4h)	Domenica Capellini	English
	4.10 Prenatal diagnosis (4h)	4.10.1 Genetc counseling	Achille Iolascon	English

Methodology and General Organisation

A. **Main Lectures**: They will have a duration of 60 minutes; The first 40 minutes will be devoted to the exhibition of the teaching topic by the teacher and the remaining 20 minutes will be devoted to the interaction between students and teacher on the key issues of teaching topic theme (18 lectures= 18 hours).

B. **Interactive Seminars**: Will last 60 minutes and they will present case studies that the approach to analyze diagnostic and therapeutic evolution of patients with major erythropoietic defects (5 seminars = 5 hours).

C. **Student supervised task**: Students will prepare for approximately 1 hour each of the teaching classes / seminars and, for this, the teacher will provide a minimum of 2 articles in PDF format on the topic of the corresponding subject (class or seminar) (25 x 1 hour classes / seminars = 25 hours).

D. **Self Assessment** : At the end of the course (maximum two weeks after the last lecture), students must submit a portfolio summarizing skills acquired in this course (Independent task = 25 hours).

Attendance and degree of participation in lectures and interactive seminars (40%)
Realization of autonomous work, presentation and discussion with the teacher (60%)

Essential information resources

RELEVANT BIBLIOGRAPHY