

Corso di Laurea Magistrale in Biologia
a.a. 2016/17

TEACHING PROGRAM in HEMATOLOGY

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INTRODUCTION	<i>Science, technique and hematology</i>
PHYSIOPATHOLOGY OF THE BLOOD	<i>Biology of the hematopoietic stem cell. Hematopoiesis: morphology and physiology. Experimental observations for the stem cell, cytokines and interleukins, bone marrow for adults, the niche of the hematopoietic stem cell. Red blood, granulocytic and megakaryocytic series differentiation</i>
TEST PERFORMANCE ASSESSMENT	<i>Sensitivity, specificity, cut-off values, predictive values</i>
TEST KNOWLEDGE	<i>Blood count, morphological observations for peripheral blood smear, dosage of ferritin, serum iron, transferrin, transferrin receptors, Hb HPLC and flow cytometry</i>
RED CELL PATHOLOGY	<i>Iporigenerative anemias by hindered DNA synthesis. Pernicious anemia, folate deficiency anemia, pathogenesis, vitamina B12 absorption, latest findings on some congenital defects</i>
IMPAIRED HEME SYNTHESIS ANEMIAS	<i>Iron-deficiency anemia, causes, symptomatology, considerations on the importance of iron in hematology, intracellular iron homeostasis, absorption and kinetics of iron, hepcidin. Genetic defects of beta thalassemia, the relationship between genotype and phenotype, symptomatology, identification of thalassemia disease carriers, alpha thalassemia, delta-beta thalassemia, sickle cell anemia, HbC and HbE</i>
SECONDARY CHRONIC ANEMIAS	<i>The rheumatoid arthritis teaching, laboratory differential diagnosis</i>
CONGENITAL AND ACQUIRED HEMOLYTIC ANEMIAS	<i>General symptoms, spherocytosis, enzymatic disorders, favism, PK lack, nocturnal paroxysmal emoglobinuria, autoimmune hemolytic anemias, Coombs test</i>
MALARIA	<i>Plasmodium, evolution and erythrocytes. Anemia caused in Malaria</i>

INTRODUCTION TO ONCOHEMATOLOGICAL DISEASES	<i>Brief outlines of the main leukemias</i>
PATHOLOGY OF HEMOSTASIS, PLASMA COAGULATION DEFECTS	<i>Lymphoblastic leukemia, acute myeloblastic leukemia, chronic lymphocytic leukemia, chronic myeloid leukemia: diagnosis, classification and role of the laboratory</i>
THROMBOTIC DIATHESIS, FAMILY THROMBOPHILIA	<i>Laboratory diagnostics, key tests, bleeding time, prothrombin time, thromboplastin time, functional fibrinogen determination</i>
LABORATORY EXERCISES	<i>Laboratory diagnostics, factor V resistance to activated C protein; S, C proteins and AT defects; predisposing factors. Summary and key concepts</i>
TECHNIQUES OF SEMIOTICS AND DIAGNOSTICS LABORATORY	<i>Use of the automatic blood cell counter. Peripheral smears: preparation, coloring and microscopic observation. Execution of the main useful tests in the diagnosis of anemias</i>
	<i>By the signs at diagnosis</i>

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