UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Genetic Pathology

2223-2-I0302D007-I0302D027M

Aims

Description of the atypical mechanisms of inheritance - Description of the diseases due to imprinting defects or to dynamic mutations, and mitochondrial and multifactorial diseases - Description of clinical cancer genetics examples

Contents

By the end of the course, the students will have acquired the general concepts and specific knowledge of ethiopathogenesis of genetic diseases

Detailed program

Classification and incidence of genetic diseases disorders of the autosomes and the sex chromosomes; effects on the phenotype. Monogenic diseases with Mendelian inheritance and effects on the phenotype; gain and loss of function mutations - Autosomal dominant and recessive inheritance: the concepts of reduced penetrance, variable expressivity, de novo mutation, germline mosaicism - Examples of pathologies - Concepts of clinical heterogeneity, locus heterogeneity, genotype-phenotype correlation Non-mendelian inheritance: 1) unstable repeat expansion diseases (Huntington's and Fragile X syndrome); genetic anticipation; 2) diseases associated with Genomic Imprinting: Angelman and Prader-Willi syndromes; 3) mitochondrial diseases Common diseases: the role of DNA polymorphisms in genetic susceptibility Cancer predisposition syndromes: predisposition to breast and colon cancer. Genetic counseling and

classification of genetic testing.

Prerequisites

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Teaching form

Lesson in attendance, subject to any ministerial changes following the COVID pandemic situation

Textbook and teaching resource

ES Tobias; M Connor; M Ferguson- Smith FONDAMENTI DI GENETICA MEDICA Ed. Pearson

Semester

First semester

Assessment method

Exam: quizzes with multiple choice. Test in attendance, subject to any ministerial changes following the COVID pandemic situation

Office hours

On request by e-mail

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING