UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Cardiovascular Imaging

2122-4-H4101D214

Aims

Giving students the tools to learn theoretical and practical indications to invasive and non-invasive study of heart and blood vessels with the most modern methods supported by the most recent guidelines. Provide students the opportunity to try these methods.

Contents

Technological developments of the last twenty years have given on one hand new non-invasive diagnostic tools that allows to obtain important and until recently no imaginable information about the structure and function of arteries and heart. On the other hand also the invasive methodology have known a rapid evolution allowing the cardiologist to treat non invasivasively the great majority of CAD patients.

Content of this course will be the approach to non-invasive methods for studying the structure and function of blood vessels and heart, including US Color Doppler, tonometry, echotracking, study of pulse wave velocity and central pulse waveform. It will be shown also a cardiac angiography with treatment of coronary stenosis. The techniques are contextualized to the study of major cardiac and vascular acute and chronic

diseases with particular interest to indications in hypertension, ischemic heart disease, and heart failure.

Detailed program

- DAY 1: study of the structure of the heart using ultrasound technique: anatomical measurements and derived indices of left ventricular hypertrophy and left ventricular remodeling (h / r), "normalization" of values (BSA, h2.7), study of systolic and diastolic function of left ventricle: traditional methods (E / A, dec Time, FE) and more innovative based on tissue Doppler and strain rate. Hints of three-dimensional echocardiography.

- DAY 2: study of carotid intima-media thickness: conventional Color Doppler and echo-tracking. Study of vascular function: pulse wave velocity, carotid distensibility, the study of 'AI and other variables related to the pressure wave profile

- DAY 3: Morpho-functional study of the low limb vessels and Ankle Brachial Index.

- DAY 4: study of coronary angiography with possible means of endovascular treatment of coronary stenosis.

Prerequisites

4th year Medical Student and over

Teaching form

Lectures and training where possible

Lessons will be provided in presence, subject to any ministerial changes following the COVID pandemic situation

Textbook and teaching resource

Laurent et al. Expert consensus document on arterial stiffness: methodological issues and clinical applications.

European Heart Journal Volume 27, Issue 21 Pp. 2588-2605. Essential Echocardiography - Scott D. Solomon.

European Heart Journal (2010) 31, 2501–2555, Guidelines on myocardial revascularization.

Semester

Second semester; April-May

Assessment method

Interactive verification at the course conclusion

Office hours

e-mail contact