UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

SYLLABUS DEL CORSO

Imaging and Theranostics Advanced Treatment in Urogenital Diseases

2627-3-H4102D137

Aims

This elective course offers an in-depth exploration of multimodal imaging techniques and advanced therapies applied to the diagnosis, staging, and management of urogenital diseases. The focus is on integrating conventional radiology, ultrasound, computed tomography (CT), magnetic resonance imaging (MRI), and nuclear medicine, with particular emphasis on theranostic therapies, to ensure a comprehensive assessment and personalized patient management. Students will have the opportunity to apply their knowledge through case-based learning and clinical observation.

Course Objectives
By the end of the course, students will be able to:

1. Understand the principles, advantages, and limitations of various imaging modalities used in the assessment of urogenital diseases.
   Knowledge and Understanding – Demonstrate an in-depth knowledge of imaging methodologies and their clinical applications.
2. Interpret radiologic findings from radiographs, ultrasound, CT, MRI, and nuclear medicine studies, including those using theranostic radiopharmaceuticals.
   Applying Knowledge and Understanding – Correctly apply theoretical knowledge to interpret multimodal imaging studies.
   3, Integrate multimodal data to formulate differential diagnoses, guide tumor staging, and support clinical patient management.
   Making Judgments – Critically evaluate and synthesize clinical and imaging information.
3. Understand the basics and applications of theranostic medicine in radionuclide therapy for urogenital tumors.
   Knowledge and Understanding & Making Judgments – Comprehend the pharmacology and regulatory aspects of theranostic radiopharmaceuticals.
4. Recognize indications, contraindications, and limitations of imaging and theranostic techniques in the urogenital field.

Knowledge and Understanding & Making Judgments – Apply criteria for appropriateness and safety.

5. Appreciate the role of imaging in monitoring therapeutic response and post-treatment surveillance.
   Knowledge and Understanding & Applying Knowledge – Use imaging to assess disease progression and therapeutic response.

Contents

1. Advanced Urogenital Imaging Modalities:
2. Urogenital Diseases and Imaging:
3. Benign and inflammatory diseases
4. Radionuclide therapy
5. Multimodal Integration and Clinical Management:
6. Multidisciplinary approaches
7. Safety and Regulations:

Detailed program

1. Advanced Urogenital Imaging Modalities:
   Conventional radiology, ultrasound, CT, multiparametric MRI
   Diagnostic and theranostic nuclear medicine (scintigraphy, PET/CT, targeted radiopharmaceuticals)
2. Urogenital Diseases and Imaging:
   Tumors (prostate, kidney, bladder)
3. Benign and inflammatory diseases
   Advanced Theranostic Therapies:
4. Radionuclide therapy
   Pharmacological aspects and safety management
5. Multimodal Integration and Clinical Management:
   Integrated clinical cases
6. Multidisciplinary approaches
7. Safety and Regulations:
   Guidelines
   National and international regulations
   Appropriateness criteria

Prerequisites

basic knowledge of the following topics: image diagnostic, urological disease, oncology

Teaching form

Lezioni frontali, discussioni di casi clinici e apprendimento basato sui problemi (PBL), tudio autonomo di casi clinici e letteratura scientifica

Textbook and teaching resource

slides, dedicated chapter, articles, guidelines and clinical cases

Semester

second semester 4th year

Assessment method

continuos assessment and presentation of clinical cases

Office hours

by appointment

Sustainable Development Goals

GOOD HEALTH AND WELL-BEING | QUALITY EDUCATION