UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Farmacologia

1718-3-H4101D017

Aims

The primary goal of the course is to provide the tools for the rationale of prescribing drugs based on their pharmacokinetic and pharmacodynamic properties, their mechanisms of action, knowing the main adverse reactions and drug interactions, and allowing a better approach to therapy. Most representative drugs are illustrated for their pharmacological actions, and mechanisms responsible for their desired and undesired actions. Other topics include the basis of pharmacoeconomics, pharmacosurveillance, and professional ethics, together with the notion that medicine is an ever changing science that needs a constant revision in relation to new scientific discoveries and the introduction of new drugs in treatments.

Contents

General principles of pharmacokinetics and pharmacodynamics. Signal transduction pathways. Therapeutic drug monitoring. Drug-drug interactions. General principles of postmarketing surveillance, clinical pharmacology and toxicology. Autonomic and somatic motor nervous systems. Cholinergic and adrenergic transmission, agonist and antagonist actions at receptors. Other autonomic neurotransmitters. Drugs acting at the neuromuscular junction and autonomic ganglia. Anticholinesterase agents. Serotonin receptor agonists and antagonists. Brain neurotransmitters. Drugs for treatment of psychiatric disorders. Antiepileptic drugs, ipnotics. Drugs for central nervous system degenerative disorders. General and local anesthetics. Opioid analgesics and antagonists, abuse, treatment of abstinence. Autacoids and drug therapy of inflammation. Drugs used in the treatment of asthma and allergic disorders. Drugs affecting renal and cardiovascular function. Diuretics, renin-angiotensin inhibitors, organic nitrates, calcium channel antagonists, alpha and beta-adrenergic receptor antagonists. Drugs used in the treatment of dyslipoproteinemias. Agents for the control of gastric acidity and treatment of gastric-duodenal peptic ulcers. Classification and mechanisms of action of antimicrobial and chemotherapeutic agents. Mechanisms of resistance to antimicrobial and chemotherapy agents. Drugs used in the chemotherapy of tuberculosis. Criteria for selecting antimicrobial agents. Antiviral agents. Classification of antineoplastic agents and general principles of cancer therapy. Anticoagulant, thrombolytic, and antiplatelet drugs. Hormones and hormone antagonists. Agents affecting calcification and bone turnover.

Detailed program

The primary goal of the course is to provide the tools for the rationale of prescribing drugs based on their pharmacokinetic and pharmacodynamic properties, their mechanisms of action, knowing the main adverse reactions and drug interactions, and allowing a better approach to therapy. Most representative drugs are illustrated for their pharmacological actions, and mechanisms responsible for their desired and undesired actions. Other topics include the basis of pharmacoeconomics, pharmacosurveillance, and professional ethics, together with the notion that medicine is an ever changing science that needs a constant revision in relation to new scientific discoveries and the introduction of new drugs in treatments. General principles of pharmacokinetics and pharmacodynamics. Consideration of genderrelated variations in pharmacokinetics as potential relevant determinants for the clinical effectiveness of therapeutic agents. Signal transduction pathways. Therapeutic drug monitoring. Drug-drug interactions. General principles of postmarketing surveillance, clinical pharmacology and toxicology. Autonomic and somatic motor nervous systems. Cholinergic and adrenergic transmission, agonist and antagonist actions at receptors. Other autonomic neurotransmitters. Drugs acting at the neuromuscular junction and autonomic ganglia. Anticholinesterase agents. Serotonin receptor agonists and antagonists. Brain neurotransmitters. Drugs for treatment of psychiatric disorders. Antiepileptic drugs, ipnotics. Drugs for central nervous system degenerative disorders. General and local anesthetics. Opioid analgesics and antagonists, abuse, treatment of abstinence. Autacoids and drug therapy of inflammation. Drugs used in the treatment of asthma and allergic disorders. Drugs affecting renal and cardiovascular function. Diuretics, renin-angiotensin inhibitors, organic nitrates, calcium channel antagonists, alpha and beta-adrenergic receptor antagonists. Drugs used in the treatment of dyslipoproteinemias. Agents for the control of gastric acidity and treatment of gastric-duodenal peptic ulcers. Classification and mechanisms of action of antimicrobial and chemotherapeutic agents. Mechanisms of resistance to antimicrobial and chemotherapy agents. Drugs used in the chemotherapy of tuberculosis. Criteria for selecting antimicrobial agents. Antiviral agents. Classification of antineoplastic agents and general principles of cancer therapy. Anticoagulant, thrombolytic, and antiplatelet drugs. Hormones and hormone antagonists. Agents affecting calcification and bone turnover

Prerequisites

Teaching form

Textbook and teaching resource

Semester

Assessment method

Office hours