



Univerza v Mariboru



MEDICINSKA FAKULTETA

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Predmet:	Izbrane vsebine in novosti v farmakologiji in toksikologiji
Course title:	Selected topics and novelties in pharmacology and toxicology

Študijski program in stopnja Study programme and level	Študijska smer Study field	Letnik Academic year	Semester Semester
EMŠ Splošna medicina General medicine		2	4

Vrsta predmeta / Course type

Univerzitetna koda predmeta / University course code:

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Lab. vaje Laboratory work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
2	40		3		45	3

Nosilec predmeta / Lecturer:

Doc. dr. Polonca Ferk

Jeziki / Predavanja / Lectures: Slovenski/Slovene

Languages: Vaje / Tutorial: Slovenski/Slovene

Pogoji za vključitev v delo oz. za opravljanje študijskih obveznosti: Prerequisites:

Ni posebnih pogojev za vključitev.
Zaželena velika motiviranost za področje farmakologije in toksikologije ter zanimanje za raziskovalno delo na tem področju.

There are no special conditions for inclusion.
Great motivation and research interest in the field of pharmacology and toxicology desired.

Vsebina:

- poglobljen študij izbranih farmakodinamičnih skupin zdravil
- novosti na področju farmakološkega zdravljenja izbranih bolezenskih stanj (kemoterapija raka ...)
- osebna medicina in osebni pristop k farmakološkemu zdravljenju
- racionalna raba zdravil
- neželeni učinki in toksičnost zdravil, farmakovigilanca
- interakcije med zdravili in interakcije zdravil s hrano
- učinkovine življenjskega sloga, zlorabe zdravil in drugih učinkovin, učinkovine, ki povzročajo odvisnost, učinkovine v športu, doping
- prehranska dopolnila, zdravilne rastline, fitofarmaki
- biološka zdravila
- elektronske zbirke podatkov o zdravilih
- razvoj novega zdravila, regulativa na področju

Content (Syllabus outline):

- detailed study on selected pharmacodynamic groups of drugs
- advances in pharmacological treatment of selected pathological conditions (cancer chemotherapy ...)
- personalized medicine and individualized pharmacotherapy
- rational use of drugs
- adverse drug effects and reactions, toxicity, pharmacovigilance
- drug-drug and drug-food interactions
- lifestyle drugs, the abuse of drugs and other substances, drug dependence, drugs in sport, doping
- food supplements, medicinal plants, phytopharmaceuticals
- biological drugs
- electronic drug databases
- development of new drugs, regulatory procedures

<p>zdravil</p> <ul style="list-style-type: none"> • farmakoepidemiološki podatki o predpisovanju zdravil in medicinskih pripomočkov v Sloveniji • raziskovalno delo na področju molekularne farmakologije: aktualno raziskovalno delo, gojenje celičnih kultur oz. celičnih linij, apoptoza, testi viabilnosti, proliferacije, citotoksičnosti, biokompatibilnosti, znotrajcelične signalne poti • raziskovalno delo na področju farmakogenetike in farmakogenomike • translacijska medicina in farmakologija: prenos laboratorijskih ugotovitev in znanja v klinično prakso, nujnost in smiselnost povezave predklinika-klinika, bazičnih in aplikativnih vidikov znanosti in stroke • terapevtsko spremljanje koncentracij zdravil v plazmi: pomen, metodologija • najpogostejše zastrupitve z zdravili v Sloveniji • toksikologija težkih kovin in druga področja specialne farmakologije • sodobna farmakoterapija in farmakoterapija prihodnosti (gensko zdravljenje ...) 	<ul style="list-style-type: none"> • pharmacoepidemiological data on prescribing drugs and medical devices in Slovenia • research work in molecular pharmacology: current research projects, growing cell cultures/cell lines, apoptosis, viability, proliferation, cytotoxicity, biocompatibility, intracellular signaling pathways • research work in pharmacogenetics and pharmacogenomics • translational medicine and pharmacology: implementation of laboratory findings and knowledge into clinical practice, necessity and importance of connecting preclinical and clinical knowledge, basic and applied scientific and professional approaches • therapeutic drug monitoring: importance, methodology • the most common drug poisonings in Slovenia • toxicology of heavy metals and other areas of special pharmacology • up to-date pharmacotherapy and future aspects of pharmacological treatment (gene therapy ...)
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Temeljni literatura in viri / Readings:

<ul style="list-style-type: none"> • Rang HP, Dale M, Ritter JM, Flower RJ, Henderson G. Pharmacology. 7th ed. Churchill Livingstone; 2012. (or the latest edition) • Katzung BG, Masters SB, Trevor AJ. Basic and clinical pharmacology. 11th ed. New York: McGraw-Hill; 2009. (or the latest edition) • Goodman LS, Gilman AG, Limbird LE, Hardman JG, Goodman Gilman A. The pharmacological basis of therapeutics. 10th ed. New York: McGraw-Hill; 2001. (or the latest edition) • Klaassen CD. Casarett & Doull's toxicology: The basic science of poisons. 7th ed. New York: McGraw-Hill; 2008. (or the latest edition) • Baza podatkov o zdravilih: http://www.zdravila.net/ • Javna agencija RS za zdravila in medicinske pripomočke: http://www.jazmp.si/ • Evropska agencija za zdravila (EMA): http://www.ema.europa.eu/ema/ • Štrukelj B, Kos J. Biološka zdravila: od gena do učinkovine. 1. izd. Ljubljana: Slovensko farmacevtsko društvo; 2007. (ali kasnejša izdaja) • Cohen N. Methods in pharmacology and toxicology: Pharmacogenomics and personalized medicine. 1st ed. Totowa: Humana Press; 2008. (or the latest edition)

Cilji in kompetence:

<ul style="list-style-type: none"> • podrobneje spoznati farmakološke lastnosti izbranih farmakodinamičnih skupin zdravil • podrobneje spoznati toksikološke lastnosti izbranih snovi • načrtovati optimalno učinkovito in varno farmakoterapijo, prilagojeno posameznemu pacientu • slediti novostim na področju farmakologije in toksikologije v relevantnih literaturnih virih

Objectives and competences:

<ul style="list-style-type: none"> • to get detailed knowledge on pharmacology of selected pharmacodynamic groups of drugs • to get detailed knowledge on toxicology of selected substances • to plan optimal, effective and safe individualized pharmacotherapy • to follow novelties in the field of pharmacology and toxicology in relevant literature sources

Predvideni študijski rezultati:

<p>Znanje in razumevanje:</p> <ul style="list-style-type: none"> • podrobno poznavanje farmakoloških lastnosti izbranih farmakodinamičnih skupin zdravil • podrobno poznavanje toksikoloških lastnosti izbranih snovi

Intended learning outcomes:

<p>Knowledge and understanding:</p> <ul style="list-style-type: none"> • detailed knowledge on pharmacology of selected pharmacodynamic groups of drugs • detailed knowledge on toxicology of selected substances

<ul style="list-style-type: none"> • izbrati optimalno, učinkovito in varno farmakoterapijo, prilagojeno posameznemu pacientu • sledenje novostim na področju farmakologije in toksikologije v relevantnih literaturnih virih <p>Prenesljive/ključne spretnosti in drugi atributi: veščine</p> <ul style="list-style-type: none"> • spoznati pomen poznavanja farmakoloških lastnosti zdravil za izbiro optimalne posamezniku prilagojene farmakoterapije 	<ul style="list-style-type: none"> • select optimal, effective and safe individualized pharmacotherapy • follow novelties in the field of pharmacology and toxicology in relevant literature sources <p>Transferable/Key Skills and other attributes: skills</p> <ul style="list-style-type: none"> • to realize the importance of understanding pharmacological properties of drugs to select optimal individualized pharmacotherapy
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Metode poučevanja in učenja:

<ul style="list-style-type: none"> • predavanja • seminarji • laboratorijsko raziskovalno delo • problemsko naravnani pouk • samostojno delo

Learning and teaching methods:

<ul style="list-style-type: none"> • lectures • seminars • laboratory research work • problem-based learning • individual work

Delež (v %) /
Weight (in %)

Načini ocenjevanja:

Način (pisni izpit, ustno izpraševanje, naloge, projekt)	Delež (v %) / Weight (in %)	Assessment: Type (examination, oral, coursework, project):
<ul style="list-style-type: none"> • domače naloge, aktivno sodelovanje • seminarska naloga, ustni zagovor obravnavanih vsebin 	<p>20 %</p> <p>80 %</p>	<ul style="list-style-type: none"> • homeworks, active cooperation • seminar, oral examination on discussed topics

Reference nosilca / Lecturer's references:

FERK, Polonca, TERAN, Nataša, GERŠAK, Ksenija. The (TAAAA)n microsatellite polymorphism in the SHBG gene influences serum SHBG levels in women with polycystic ovary syndrome. *Hum. reprod. (Oxf.)*, 2007, letn. 22, št. 4, str. 1031-1036. [COBISS.SI-ID 22198489]

FERK, Polonca, POHAR PERME, Maja, GERŠAK, Ksenija. Insulin gene polymorphism in women with polycystic ovary syndrome. *J. int. med. res.*, 2008, letn. 36, št. 6, str. 1180-1187. [COBISS.SI-ID 25007833]

ČERNE, Jasmina Živa, **FERK, Polonca, LESKOŠEK, Branimir, GERŠAK, Ksenija.** Hormone replacement therapy and some risk factors for breast cancer among Slovenian postmenopausal women. *Climacteric (Carnforth)*, 2011, vol. 14, issue 4, str. 458-463, doi: 10.3109/13697137.2010.541307. [COBISS.SI-ID 28234457]

PAL, Marjetka, LESKOŠEK, Branimir, **FERK, Polonca.** Poraba antihipertenzivnih zdravil v Sloveniji in primerjava z Norveško = Consumption of antihypertensives in Slovenia and comparison with Norway. *Zdrav Vestn (Tisk. izd.)*. [Tiskana izd.], maj 2011, letn. 80, št. 5, str. 386-394, ilustr. http://szd.si/user_files/vseбина/Zdravniski_Vestnik/2011/maj/386-94.pdf. [COBISS.SI-ID 28446937]

ČERNE, Jasmina Živa, **FERK, Polonca, FRKOVIĆ-GRAZIO, Snježana, LESKOŠEK, Branimir, GERŠAK, Ksenija.** Risk factors for HR- and HER2-defined breast cancer in Slovenian postmenopausal women. *Climacteric (Carnforth)*, 2012, vol. 15, issue 1, str. 68-74, doi: 10.3109/13697137.2011.609286. [COBISS.SI-ID 29099993]

SKRGATIC, L., PAVIČIĆ BALDANI, Dinka, ČERNE, Jasmina Živa, **FERK, Polonca, GERŠAK, Ksenija.** CAG repeat polymorphism in androgen receptor gene is not directly associated with polycystic ovary syndrome but influences serum testosterone levels. *J Steroid Biochem Mol Biol.* [Print ed.], 2012, vol. 128, issue 3/5, str. 107-112, graf. prikazi, doi: 10.1016/j.jsbmb.2011.11.006. [COBISS.SI-ID 29115865]

PAL, Marjetka, **FERK, Polonca.** Interakcije zdravil z zaviralci angiotenzinske konvertaze = Drug interactions with angiotensin-converting enzyme inhibitors. *Acta medico-biotechnica*, 2012, vol. 5, no. 1, str. 15-23. http://www.actamedbio.mf.uni-mb.si/article/Interakcije+zdravil+z+zaviralci+angiotenzinske+konvertaze_414. [COBISS.SI-ID 512188728]

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FERK, Polonca, LIPNIK-ŠTANGELJ, Metoda. Navodila za vaje iz farmakologije in toksikologije. Spremenjena in dopolnjena izd. Maribor: Medicinska fakulteta, 2010. 41 str., ilustr. ISBN 978-961-6739-12-2. [COBISS.SI-ID 64958721]