

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Ime predmeta: Infekcijske bolezni
Course title: Infectious diseases

Študijski program in stopnja Study programme and cycle	Študijska smer Study option	Letnik Year of study	Semester Semester
Splošna medicina, enovit magistrski študijski program		Peti	10.
General medicine, Uniform master's degree study program		Fifth	10th

**Vrsta predmeta (obvezni ali izbirni) /
Course type (compulsory or elective)**

obvezni
compulsory

Univerzitetna koda predmeta / University course code:

Predavanja Lectures	Seminar Seminar	Vaje Tutorial	Klinične vaje Clinical training	Druge oblike študija Other forms of study	Samost. delo Individual work	ECTS
15	30	AV LV RV	15		90	5

Nosilec predmeta / Course coordinator:

doc. dr. Nina Gorišek Miksić

Jeziki /Languages:

Predavanja / Lectures: slovenski/slovene
Vaje / Tutorial: slovenski/slovene

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

Prerequisites for enrolling in the course or for performing study obligations:

Vsebina (kratek pregled učnega načrta):

Uvod v infekcijske bolezni, klinični in laboratorijski znaki vnetja.

Bakterijske okužbe: stafilokokne, streptokokne, pertusis, tetanus, botulizem, davica, leptospiroze, lymška borelioz.

Virusne okužbe, ki jih povzročajo: enterični virusi, respiratorni sincicijski virusi, adenovirusi, herpes virusi, varicela-zoster virus, citomegalovirus, Epstein-Barr virus, virus influence in parainfluence, virusi hepatitisa, ošpice, rdečke, exanthema subitum, exanthema infectiosum, AIDS, klamidijske okužbe, rikecioze. Parazitarne bolezni: trihineloz, malarija, tripanosomioza. Zoonoze: antraks, bruceloza, lišmanioza, tularemija. Bolezenski sindromi: bakterijski meningitisi, serozni meningitisi, encefalitisi, bakterijske in atipične pljučnice, črevesne okužbe,

Content (syllabus outline):

Introduction to infectious diseases, clinical and laboratory signs of inflammation.

Bacterial infections: staphylococcal, streptococcal, pertusis, tetanus, botulism, diphtheria, leptospirosis, Lyme boreliosis.

Viral infections cause by enteroviruses, sintitial respiratory viruses, adenoviruses, herpes viruses, varicella-zoster virus, cytomegalovirus, Epstein-Barr virus, influenza and parainfluenza virus, hepatitis, rubeola, rubella, exanthema subitum, exanthema infectiosum, AIDS; chlamidia, rickettsia infections.

Parasitic infestations: trihinelosis, malaria, trypanosomiasis. Zoonoses: anthrax, bruceloses, leishmanosis, tularemia. Disease syndroms: bacterial meningitis, serous meningitis, encephalitis, bacterial and

hemoragične mrzlice, nejasna vročinska stanja, sepsa, izpuščajne bolezni, sindrom utrujenosti.

Tematsko posodabljanje predavanj zahteva dodatek ali razširitev poglavij s spoznanji o vse bolj aktualnih infekcijskih (okužbe pri imunsko oslabljenih osebah, transplantirancih, nosilcih umetnih materialov, bolnišnične okužbe, okužbe v tropskih razmerah oz. na potovanjih, bioterrorizmu).

Infektologija za odrasle bolnike

Študent mora spoznati in obvladati diagnostični in terapevtski pristop pri bolniku s sumom na infekcijsko bolezen oziroma pri vročičnem bolniku, spoznati mora značilnosti okužb glede na prizadeti organski sistem (npr. okužb osrednjega živčevja, dihal, prebavil, sečil, spolovil, mišic, kosti in sklepov, kože in podkožja), značilnosti nekaterih bolezni oziroma bolezenskih stanj (npr. virusni hepatitis, AIDS, Lymeova borelijoza, infekcijski endokarditis, sepsa, septični šok, pogostejše tropske bolezni), značilnosti okužb pri bolnikih z ohranjeno ali okvarjeno imunostjo in/ali vgrajenimi umetnimi materiali, ukrepe za preprečevanje nalezljivih bolezni, doktrino racionalne uporabe antibiotikov, protivirusnih, protiglivičnih in protiparazitnih zdravil, kakor tudi pristope za odkrivanje, dokazovanje, zdravljenje in preprečevanje bolnišničnih okužb.

Pediatrična infektologija

Specializant spozna značilnosti in osvoji znanje o etiologiji, epidemiologiji, kliničnih simptomih in znakih, zdravljenju in preprečevanju okužb pri otrocih v različnih starostnih obdobjih. Usposobi se tudi za interpretacijo rezultatov laboratorijskih testov, še posebno tistih, ki se razlikujejo od ugotovitev pri odraslih bolnikih.

Intenzivna in urgentna infektologija

Specializant se seznani s prepoznavanjem, diagnostiko in zdravljenjem akutnih infekcijskih bolezni, ki ogrožajo življenje in ki potrebujejo intenzivno zdravljenje, kakor tudi s preprečevanjem okužb in pravili bolnišnične higiene na oddelku za intenzivno terapijo.

Sklopi naslovnih tem predavanj:

STREPTOKOKNE OKUŽBE:

- streptokokno vnetje žrela (tonsillopharyngitis)
- škrlatinka (scarlatina)
- šen (erysipelas)
- impetigo – pyoderma
- pnevmokokne okužbe
- druge

atypical pneumoniae, intestinal infections, hemorrhagic fever, unexplained fever conditions, sepsis, cutaneous rash, fatigue syndrome.

Updating of lecture themes requires an addition or extension of chapters with new findings on nowadays topical infections (in immune-deficient persons, transplant recipients, recipients of artificial materials, hospital infections, tropic areas- or travel-related infections, bioterrorism).

Infectology in adult patients

Students shall learn and become proficient in the diagnostic and therapeutic approach to patients with suspected infectious disease or febrile condition, learn about infection characteristics with respect to organ system affected (e.g. infections of the central nervous-, respiratory-, gastrointestinal-, urinary system, reproductive organs, muscles, bones and joints, skin and subcutaneous tissues), the characteristics of certain diseases or pathologic conditions (e.g. viral hepatitis, AIDS, Lyme borreliosis, infectious endocarditis, sepsis, septic shock, more frequent tropic diseases), characteristics of infections in patients with preserved or damaged immunity and/or inserted artificial materials, measures for prevention of infectious diseases, doctrine of rational use of antibiotics, antiviral, antifungal and anti-parasitic medications, as well as approaches for the detection, verification, treatment and prevention of hospital infections.

Paediatric infectology

Residents learn and acquire knowledge of etiology, epidemiology, clinical symptoms and signs, treatment and prevention of infection in children in different age periods. They become proficient in the interpretation of the findings of laboratory tests, particularly the ones that differ from those in adult patients.

Intensive and emergency infectology

Residents become acquainted with the identification, diagnosis and treatment of acute life-threatening infectious diseases, which require intensive therapy, as well as with the prevention of infections and rules of hospital hygiene in the unit of intensive therapy.

Sets of lecture title themes:

STREPTOCOCCAL INFECTIONS:

- streptococcal inflammation of the pharynx (tonsillopharyngitis);
- Scarlet fever (scarlatina)
- Erysipelas

STAFILOKOKNE OKUŽBE

- stafilokokne okužbe kože
- stafilokokna pljučnica
- stafilokokni meningitis
- stafilokokna sepsa
- stafilokokni endokarditis
- stafilokokni perikarditis
- stafilokokni osteomielitis
- stafilokokni artritis
- sindrom toksičnega šoka

OKUŽBE Z ANAEROBI

- tetanus
- botulizem
- druge klostridijske bolezni
- davica

OKUŽBE S HERPES VIRUSI

- s herpes simplex virusom tip 1, 2, 6
- s citomegalovirusom
- z varicela – zoster virusom (varicella, herpes zostere)
- z Epstein Barrovim virusom (mononucleosis infectiosa)

ČREVESNE OKUŽBE:

Salmoneloze

- trebušni tifus
- paratifus A, B
- akutni enterokolitis

Griža (dysenteria)

Kampilobakterioza

Zastrupitev s hrano – stafilokokna

- Clostridium perfringens
- Bacillus cereus

Jersinioza

Kolera

Virusni enterokolitisi

- rotavirusni
- norwalk virusni
- adenovirusni
- astrovirusni

- Impetigo – pyoderma
- Pneumococcal infections
- Others

STAPHYLOCOCCAL INFECTIONS

- staphylococcal infections of the skin
- staphylococcal pneumonia
- staphylococcal meningitis
- staphylococcal sepsis
- staphylococcal endocarditis
- staphylococcal pericarditis
- staphylococcal osteomyelitis
- staphylococcal arthritis
- toxic shock syndrome

ANAEROBIC INFECTIONS

- tetanus
- botulism
- other clostridial diseases
- diphtheria

HERPES VIRUS INFECTIONS

- with herpes simplex virus types 1, 2 and 6
- with cytomegalovirus
- with varicella, herpes zoster virus
- with Epstein-Barr virus (mononucleosis infectiosa)

INTESTINAL INFECTIONS:

Salmonellosis

- typhoid fever
- paratyphoid fever A, B
- acute enterocolitis

Bloody diarrhea (dysenteria)

Campylobacteriosis

Food poisoning - staphylococcal

- Clostridium perfringens
- Bacillus cereus

Yersiniosis

Cholera

Viral enterocolitis infections

- rotaviral infections
- Norwalk virus infections
- adenoviral
- astroviral

Driske na potovanjih Driske pri imunsko motenih bolnikih Driske povzročene z E. coli Driske povzročene z aeromonas sp. Driske povzročene s Clostridium difficile OKUŽBE OSREDNJEGA ŽIVČEVJA Gnojni (bakterijski) meningitis - meningokokni meningitis - Pneumokokni meningitis - Hemofilusni meningitis - Listerijski meningitis - Stafilokokni meningitis - Gramnegativni bacilarni meningitis Serozni meningitisi, meningoencefalitisi - tuberkulozni meningitis - leptospirozni meningitis - borelijski meningitis - brucelozni meningitis - mikoplazmatski meningitis - klopni meningoencefalitis - herpetični (HSV tip 1, 2) meningoencefalitis - enterovirusni meningoencefalitisi - glivični meningoencefalitis - parazitni meningoencefalitis OKUŽBE DIHAL Tonsilofaringitis Bakterijske pljučnice Atipične pljučnice: - klamidijske okužbe - mikoplazemske okužbe - legioneloze - Q mrzlica Oslovski kašelj (pertussis) Influenca Parainfluenca Virusna prehladna obolenja Adenoviroze IZPUŠČAJNE BOLEZNI Ošpice (morbili) Rdečke (rubella)	Travel-related diarrheas Diarrheas in immune-deficient patients E. coli-caused diarrheas Aeromonas sp.-caused diarrheas Clostridium difficile -caused diarrheas CENTRAL NERVOUS SYSTEM INFECTIONS Purulent (bacterial) meningitis - meningococcal meningitis - pneumococcal meningitis - Haemophilus influenzae-caused meningitis - listerial meningitis - staphylococcal meningitis - gram-negative bacterial meningitis Serous meningitis, meningoencephalitis - tuberculous meningitis - leptospirosis-caused meningitis - Borellia-caused meningitis - brucelous meningitis - mycoplasma meningitis - tick-borne meningoencephalitis - herpetic (HSV type 1, 2) meningoencephalitis - enteroviral meningoencephalitis - fungal meningoencephalitis - parasitic meningoencephalitis RESPIRATORY INFECTIONS Tonsilopharyngitis Bacterial pneumonias Atypical pneumonias - chlamidial infections - mycoplasmic infections - legionelloses - Q fever Whooping cough (pertussis) Influenza Parainfluenza Viral cold-related diseases Adenoviroses RASH DISEASES
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Erythema infectiosum	Measles (morbili)
Exanthema subitum	German measles (rubella)
Norice (varicella) – herpes zoster	Infectious erythema
Rikecioze	Exanthema subitum
	Varicella - herpes zoster
	Ricketsioses
VIRUSNI HEPATITISI – A, B, C, D,E, G, H	
	VIRAL HEPATITISES – A, B, C, D,E, G, H
PARAZITNE BOLEZNI	
Toksoplazmoza	PARASITIC DISEASES
Lamblioza	Toxoplasmosis
Tenioza – cisticerkoza	Lambliosis
Ehinokokoza	Teniosis – cysticercosis
Trihineloz	Echinococcosis
Filarioza	Trichinosis
Okužbe s pnevmocistis carinii	Filarosis
	Pneumocystis carinii infections
ZOONOZE	
Listerioza	ZOONOSES
Bruceloza	Listeriosis
Tularemija	Brucellosis
Lymska borelijoza	Tularaemia
Erlihioza	Lyme borreliosis
Vranični prasad (antraks)	Ehrlichiosis
Bolezni mačke opraskanine	Anthrax
Steklina (rabies)	Cat-scratch diseases
	Rabies
TROPSKE BOLEZNI	
Malaria	TROPICAL DISEASES
Amebija	Malaria
Lišmanioza	Amebiasis
Tripanosomoza	Leishmaniasis
Shistosomoza	Trypanosomiasis
Hemoragične mrzlice:	Schistosomiasis
- rumena mrzlica	Haemorrhagic fevers:
- Denga	- yellow fever
- Hantan mrzlica	- Dengue fever
- Lassa mrzlica	- Hantan fever
- Marburg mrzlica	- Lassa fever
- Ebola	- Marburg fever
Leptospiroze	

Kuga GLIVIČNE OKUŽBE NOZOKOMIALNE (BOLNIŠNIČNE) OKUŽBE HIV okužba – AIDS OKUŽBE PRI IMUNSKO MOTENIH BOLNIKI OKUŽBE PRI NOSILCIH UMETNIH MATERIALOV OKUŽBE PRI TRANSPLANTIRANCIH VROČINA NEZNANEGA IZVORA (STATUS FEBRILIS) NAJPOMEMBNEJŠI SIMPTOMI IN ZNAKI PRI OPISOVANJU IN DIAGNOSTICIRANJU INFEKCIJSKIH BOLEZNI: vročina diplopija mrzlica fotofobija bolečina nistagmus krvavitev anizokorija hujšanje midrijaza utrujenost mioza splošno bolezensko počutje dispnoa hipotermija hiperventilacija neredno dihanje bolečine pri dihanju nenadna smrt bolečine v prsih lokalna in generalizirana limfadenopatija nauzea cianoza vomit ikterus bolečine v trebuhu lokalna rdečina kože napetost preko pasu kožni izpuščaji diareja hemoragična diateza primes sluzi, krvi v blatu pik žuželke pekoča mikcija	- Ebola Leptospiroses Plague FUNGAL INFECTIONS NOSOCOMIAL (HOSPITAL) INFECTIONS HIV infection – AIDS INFECTIONS IN IMMUNE-DEFICIENT PATIENTS INFECTIONS IN ARTIFICIAL MATERIAL RECIPIENTS INFECTIONS IN TRANSPLANT RECIPIENTS FEBRILE CONDITION OF UNKNOWN ORIGIN (STATUS FEBRILIS) MOST IMPORTANT SIGNS AND SYMPTOMS IN DESCRIBING AND DIAGNOSING INFECTIOUS DISEASES: fever diplopia chills photophobia pain nystagmus hemorrhage anisochoria loss of body weight mydriasis fatigue miosis general feeling of illness dyspnea hypothermia hyperventilation irregular breathing painful breathing sudden death pain in the chest local and generalized lymphadenopathy nausea cyanosis vomiting icterus (jaundice) pain in the abdomen local erythema of the skin tension in the waist area cutaneous rash diarrhea
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rana polakisurija glavobol oligurija trizmus anurija bolečine v zatilju bolečine v ledjih otrplost tilnika motnje zavesti epistaksa parestezije nahod tremor strabizem mišični krči paralize Razen opisov klasičnih infekcijskih bolezni in okužb posameznih organov bomo od študentov zahtevali tudi poznavanje patofiziološkega razumevanja in diferencialno diagnostiko komatoznih stanj, septičnega šoka, ARDS, dehidracije in akutne ledvične odpovedi ter razumevanje pojmov medsebojnih odnosov med makro in mikro organizmom (saprofit – komerzal – parazit – patogen; infekt – infekcijska bolezen; virulenca; rezistenca; imunost).	hemorrhagic diatesis presence of mucus and/or blood in stool insect sting burning sensation on urination wound polakisuria headache oliguria trismus anuria pain in the nape of the neck pain in the loins neck stiffness consciousness disorders epistaxis paresthesias rhinitis (runny nose) tremor strabismus muscle spasms paralysis Besides being able to describe classical infectious diseases and individual organ infections, the students will be expected to understand patho-physiology and differential diagnosis of comatous conditions, septic shock, ARDS, dehydration and acute renal failure; they should also be able to explain the terms associated with relationship between macro- and microorganism (saprophyte – commensal – parasite – pathogen; infectant – infectious disease; virulence; resistance; immunity).
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Temeljni literatura in viri / Reading materials:

Temeljna - Marolt-Gomišček M, Radšel-Medvešček A. Infekcijske bolezni, Tangram, Ljubljana 2002. V jeseni 2014 pričakujemo nov učbenik. Dopolnilna - Poglavje o infekcijskih boleznih v učbeniku Longo in sod., Harrison's Principle of Medicine, McGraw Hill, New York 2013; Izbrana poglavja iz infekcijskih bolezni 485-778 - Mandel GL, Bennett JE, Dolin R. Principles and Practice of Infectious Diseases. Churchill Livingstone, Philadelphia, 2005. - Mayhall CG. Hospital epidemiology and Infection Control. Lippincott Williams and Wilkins. 4. izdaja. Philadelphia, 2012. - Begovac J, Božinović D, Lisić M et al. Infektologija. Profil. Zagreb, 2006. - Beović, Strle, Čizman, Tomažič, Infektološki simpoziji, Medicinski razgledi. Ljubljana, v l. 1995-2014. - Gorišek-Reberšek J. in sod. Bedjaničevi simpoziji, SB Maribor, Maribor, v l. 1997-2014. - Lešničar G., Infektološki Lešničarjev simpozij, Laško 2012

Cilji in kompetence:

Študent pri pouku spozna epidemiološke, patofiziološke, etiopatogenetske in klinične značilnosti infekcijskih bolezni, lastnosti povročiteljev (patogenost, virulenca, itd.) in gostiteljev (dovzetnost, nagnjenost, itd.) ter njihove medsebojne odnose. Spozna in zna razlikovati bolezenska dogajanja pri različnih patogenetskih oblikah infekcijskih bolezni, (tako lokalnih, kot sistemskih). Seznani se s posebnostmi anamneze in klinične preiskave pri infekcijskih boleznih, mikrobiološkim in serološkim dokazovanjem povročiteljev, osnovami racionalne uporabe antibiotikov, kemo- in imunoprofilakse ter z aktualnim epidemiološkim stanjem infekcijskih bolezni pri nas in v svetu. Tako razume bolezenska dogajanja in je sposoben samostojno ocenjevati načine preprečevanja in zdravljenja teh bolezni.

Objectives and competences:

Students learn about epidemiological, pathophysiological, etio-pathogenetic and clinical characteristics of infectious diseases, causative agent (pathogenic potential, virulence, etc.) and host (susceptibility, inclination, etc.) properties and their interrelations. They learn to distinguish between different pathogenetic forms of infectious diseases (local as well as systemic). They get acquainted with specificity of anamnesis and clinical examination in infectious diseases, microbiological and serological verification of causative agents, basics of rational use of antibiotics, chemo- and immunoprophylaxis, and with current epidemiological situation in the area of infectious diseases in the country and abroad. Thus, they understand pathological occurrences and are able to independently consider possible preventive measures and treatment of these diseases.

Predvideni študijski rezultati:

Znanje in razumevanje:

- prepoznavanje klinične slike
- uvajanje diagnostičnih preiskav
- diferencialno-diagnostična presoja
- zdravljenje bolezni

Prenesljive/ključne spretnosti in drugi atributi:

- poznavanje osnovnih higienskih principov
- obvladovanje antibiotične profilakse in zdravljenja

Intended learning outcomes:

Knowledge and Understanding:

- recognition of clinical picture
- implementation of diagnostic investigations
- differential-diagnostic evaluation
- treatment of diseases

Transferable/Key Skills and other attributes:

- knowledge of the basic principles of hygiene
- knowledge of antibiotic prophylaxis and treatment

Metode poučevanja in učenja:

- predavanja z avdio-vizuelno podporo
- seminarji
- klinične vaje

Learning and teaching methods:

- lectures with audio-visual support
- seminars
- clinical work

Delež (v %) /

Share (in %)

Načini ocenjevanja:

- pisni izpit

ŠTUDIJSKE OBVEZNOSTI ŠTUDENTOV:
predavanja in seminarji

POGOJI ZA PRISTOP K POSAMEZNEMU
PREVERJANJU ZNANJA: opravljeni seminarji in prisotnost na predavanjih

100

Assessment methods:

- written examination

ACADEMIC OBLIGATIONS OF STUDENTS:
lectures and coursework

REQUIREMENTS FOR ACCESS TO INDIVIDUAL
KNOWLEDGE CHECKING: completed coursework
assignments and attendance at lectures

Reference nosilca / Course coordinator's references:

SEME, Katja, VRHOVAC, Maja, MOČILNIK, Tina, MATIČIČ, Mojca, LEŠNIČAR, Gorazd, BAKLAN, Zvonko, MEGLIČ-VOLKAR, Jelka, RAJTER, Mojca, ŠTEPEC, Srečko, LUNAR, Maja M., POLJAK, Mario. Hepatitis C virus genotypes in 1,504 patients in Slovenia, 1993-2007. Journal of medical virology, ISSN 0146-6615, 2009, letn. 81, št. 4, str. 634-639, doi: 10.1002/jmv.21427. [COBISS.SI-ID 25417945], [JCR, SNIP, WoS do 30. 12. 2013: št. citatov (TC): 13, čistih citatov (CI):

12, normirano št. čistih citatov (NC): 4, Scopus do 31. 12. 2013: št. citatov (TC): 14, čistih citatov (CI): 12, normirano št. čistih citatov (NC): 4]

SAJOVIC, Matjaž, LEŠNIČAR, Gorazd, DERNOVŠEK, Mojca Zvezdana. Septic arthritis of the knee following anterior cruciate ligament reconstruction. Orthopedic reviews, ISSN 2035-8164, 2009, let. 1, št. 1, e3 [str. 6-10]. [COBISS.SI-ID 423331]

LEŠNIČAR, Gorazd, BLATNIK, Janja, ŠIBANC, Branko, MILOTIČ, Irena, SELIČ, Tanja, MATIČIČ, Mojca, FERLAN-MAROLT, Vera, SEME, Katja, LUNAR, Maja M., POLJAK, Mario. Naše izkušnje pri zdravljenju bolnikov s kroničnim hepatitisom B v Splošni bolnišnici Celje = Our experience in the treatment of patients with chronic viral hepatitis B in Celje general hospital. V: LEŠNIČAR, Gorazd (ur.). Zbornik predavanj. Celje: Splošna bolnišnica, 2012, str. 93-118. [COBISS.SI-ID 513196]

SELIČ, Tanja, MATIČIČ, Mojca, POLJAK, Mario, SEME, Katja, LEŠNIČAR, Gorazd. Zdravljenje naivnih bolnikov s kroničnim hepatitisom v Splošni bolnici Celje v letih 2007-2012 = Treating of naïve patients with chronic hepatitis C in Celje general hospital from 2007-2012. V: LEŠNIČAR, Gorazd (ur.). Zbornik predavanj. Celje: Splošna bolnišnica, 2012, str. 119-130. [COBISS.SI-ID 512940]

LEŠNIČAR, Gorazd. Razvoj in prikaz dela Katedre za infektologijo Medicinske fakultete Univerze v Mariboru = Presentation of the development of the Chair of infectology at the Medical Faculty of the University of Maribor. V: REBERŠEK GORIŠEK, Jelka (ur.), SALETINGER, Rajko (ur.). Infektologija nekoč, danes, jutri : 80 let Oddelka za nalezljive bolezni in vročinska stanja in 7. Bedjaničev simpozij z mednarodno udeležbo, Maribor, 29.-30. maj 2009 : zbornik predavanj in praktikum. Maribor: Univerzitetni klinični center, 2009, str. 63-72. [COBISS.SI-ID 445347]