


UČNI NAČRT PREDMETA / SUBJECT SPECIFICATION

Predmet:	Infekcijske bolezni
Subject Title:	Infectious diseases

Študijski program Study programme	Študijska smer Study field	Letnik Year	Semester Semester
Splošna medicina General medicine - EMŠP		5	10

Univerzitetna koda predmeta / University subject code:

Predavanja Lectures	Seminar Seminar	Sem. vaje Tutorial	Klin. vaje Clin. work	Teren. vaje Field work	Samost. delo Individ. work	ECTS
15	30		15		90	5

Nosilec predmeta / Lecturer:

doc.dr.Nina gorišek Miksić,dr.med.

Jeziki /
Predavanja / Lecture:

Slovenski/Slovene

Languages:
Vaje / Tutorial:

Slovenski/Slovene

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

Uvod v infekcijske bolezni, klinični in laboratorijski znaki vnetja.

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

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

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

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

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

Parasitic infestations: trihinelosis, malaria, trypanosomiasis. Zoonoses: anthrax, brucellosis, leishmaniasis, tularemia. Disease syndromes: bacterial meningitis, serous meningitis, encephalitis, bacterial and atypical pneumoniae, intestinal infections, hemorrhagic fever, unexplained fever conditions, sepsis, cutaneous rash, fatigue syndrome.

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Updating of lecture themes requires an addition or extension of chapters with new findings on nowadays topical infections (in immune-deficient persons, transplant recipients,

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, lymska borelioza, 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.

Pediatrska infektologija

Študent 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

Študent 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

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

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

Students 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

Students 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
- 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

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- 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

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) meningitisi

- 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

- 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

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

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- legioneloze - Q mrzlica Oslovski kašelj (pertussis) Influenca Parainfluenca Virusna prehladna obolenja Adenoviroze IZPUŠČAJNE BOLEZNI Ošpice (morbili) Rdečke (rubella) Erythema infectiosum Exanthema subitum Norice (varicella) – herpes zoster Rikecioze VIRUSNI HEPATITISI – A, B, C, D,E, G, H PARAZITNE BOLEZNI Toksoplazmoza Lamblioza Tenioza – cisticerkoza Ehinokokoza Trihineloz Filarioza Okužbe s pneumocistis carinii ZOONOZE Listerioza Bruceloza Tularemija Lymška borelijoza Erlhioza Vranični prasad (antraks) Bolezni mačje opraskanine Steklina (rabies) TROPSKE BOLEZNI Malarija Amebiza Lišmanioza Tripanosomoza Shistosomoza Hemoragične mrzlice: - rumena mrzlica - Denga - Hantan mrzlica - Lassa mrzlica - Marburg mrzlica - Ebola Leptospiroze Kuga GLIVIČNE OKUŽBE NOZOKOMIALNE (BOLNIŠNIČNE) OKUŽBE HIV okužba – AIDS OKUŽBE PRI IMUNSKO OSLEBELIH BOLNIKI OKUŽBE PRI NOSILCIH UMETNIH MATERIALOV OKUŽBE PRI TRANSPLANTIRANCI VROČINA NEZNANEGA IZVORA (STATUS FEBRILIS)	RESPIRATORY INFECTIONS Tonsilopharyngitis Bacterial pneumonias Atypical pneumonias - chlamidial infections - mycoplasmic infections - legionellosis - Q fever Whooping cough (pertussis) Influenza Parainfluenza Viral cold-related diseases Adenoviruses RASH DISEASES Measles (morbili) German measles (rubella) Infectious erythema Exanthema subitum Varicella - herpes zoster Rickettsioses VIRAL HEPATITISES – A, B, C, D,E, G, H PARASITIC DISEASES Toxoplasmosis Lambliosis Teniosis – cysticercosis Echinococcosis Trichinosis Filarosis Pneumocystis carinii infections ZOONOSES Listeriosis Brucellosis Tularaemia Lyme borreliosis Ehrlichiosis Anthrax Cat-scratch diseases Rabies TROPICAL DISEASES Malaria Amebiasis Leishmaniasis Trypanosomiasis Schistosomiasis Haemorrhagic fevers: - yellow fever - Dengue fever - Hantan fever - Lassa fever - Marburg fever - Ebola Leptospirosis Plague
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NAJPOMEMBNEJŠI SIMPTOMI IN ZNAKI PRI OPISOVANJU IN DIAGNOSTICIRANJU INFEKCIJSKIH BOLEZNI: 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).	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: 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 / Textbooks:

Temeljna Tomažič J, Strle F. Infekcijske bolezni, Združenje za infektologijo, Slovensko zdravniško društvo Ljubljana 2017; druga dopolnjena izdaja Dopolnilna - Poglavlje 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
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Cilji:

Študent pri pouku spoznava 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). Seznan se s posebnostmi anamneze in klinične preiskave pri infekcijskih boleznih, mikrobiološkim in serološkim dokazovanjem povzročiteljev, 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:

Students learn about epidemiological, patho-physiological, 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:

Intended learning outcomes:

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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	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:	Learning and teaching methods:
- predavanja z avdio-vizuelno podporo - seminarji - klinične vaje	- lectures with audio-visual support - seminars - clinical work
Načini ocenjevanja:	Assessment:
- pisni izpit ŠTUDIJSKE OBVEZNOSTI ŠTUDENTOV: predavanja in seminarji POGOJI ZA PRISTOP K POSAMEZNEMU PREVERJANJU ZNANJA: opravljeni seminarji in prisotnost na predavanjih	Delež (v %) / Weight (in %) 100 % 80% prisotnost na predavanjih 80% prisotnost na seminarjih - 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 / Lecturer's references:	
1. LORA-TAMAYO, Jaime, GORIŠEK MIKSIĆ, Nina, TREBŠE, Rihard, et al. The not-so-good prognosis of Streptococcal periprosthetic joint Infection managed by implant retention : the results of a large multicenter study. <i>Clinical infectious diseases</i>, ISSN 1058-4838. [Print ed.], Jun. 2017, vol. 64, iss. 12, str. 1742-1752, ilustr. https://academic.oup.com/cid/article-lookup/doi/10.1093/cid/cix227, doi: 10.1093/cid/cix227. [COBISS.SI-ID 1539442628] 2. URŠIČ, Tina, GORIŠEK MIKSIĆ, Nina, LUSA, Lara, STRLE, Franc, PETROVEC, Miroslav. Viral respiratory infections in a nursing home : a six-month prospective study. <i>BMC infectious diseases</i>, ISSN 1471-2334, Nov. 2016, vol. 16, no. 1, str. 1-9. https://bmcinfectdis.biomedcentral.com/articles/10.1186/s12879-016-1962-8, doi: 10.1186/s12879-016-1962-8. [COBISS.SI-ID 32921817] 3. GORIŠEK MIKSIĆ, Nina, URŠIČ, Tina, SIMONOVICH, Zoran, LUSA, Lara, LOBNIK ROJKO, Polona, PETROVEC, Miroslav, STRLE, Franc. Oseltamivir prophylaxis in controlling influenza outbreak in nursing homes : a comparison between three different approaches. <i>Infection</i>, ISSN 0300-8126, Feb. 2015, vol. 43, issue 1, str. 73-81, ilustr., doi: 10.1007/s15010-014-0703-4. [COBISS.SI-ID 31749849] 4. GORIŠEK MIKSIĆ, Nina. Spinal infections with and without hardware : the viewpoint of an infectious disease specialist. <i>European journal of orthopaedic surgery & traumatology</i>, ISSN 1633-8065, 2013, vol. 23, suppl. 1, str. S21-S28. http://download.springer.com/static/pdf/360/art%253A10.1007%252Fs00590-013-1239-5.pdf?auth66=1397115869_51b5ac5a87d3ece64cd7202831bdc9ea&ext=.pdf, doi: 10.1007/s00590-013-1239-5. [COBISS.SI-ID 4941887] 5. GORIŠEK MIKSIĆ, Nina, OREŠKOVIĆ, Slavko, BUT, Igor. Salmonella ovarian abscess in young girl presented as acute abdomen - case report. <i>Collegium antropologicum</i>, ISSN 0350-6134, 2011, vol. 35, no. 1, str. 223-225. [COBISS.SI-ID 3867199]	