



Univerza v Mariboru

Medicinska fakulteta

UČNI NAČRT PREDMETA / COURSE SYLLABUS

Ime predmeta:	Izbrane vsebine in novosti v anesteziologiji
Course title:	Selected topics and novelties in anaesthesiology

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, šesti	9., 11.
General medicine, Uniform master's degree study program		Fifth, sixth	9th, 11th

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

izbirni

elective

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
5	40	AV LV RV			45	3

Nosilec predmeta / Course coordinator:

prof. dr. Mirt Kamenik

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):

Vsebino obravnavane teme izbere študent s pomočjo mentorja. Natančnejši opis znanj, veščin, bolezni in bolezenskih stanj ter teoretičnih osnov je opisano pri predmetu Anesteziologija.

Content (syllabus outline):

Content of the theme can be chosen from the offered range of electives, with mentor's help. More detailed description of knowledge, skills, diseases and pathologic states are presented in subject Anaesthesiology.

Temeljni literatura in viri / Reading materials:

Vesna Paver-Eržen (ur.). Kontinuirano podiplomsko izobraževanje iz anesteziologije (CME) / 17. tečaj CEEA. Ljubljana: Slovensko združenje za anesteziologijo in intenzivno medicino, Slovensko zdravniško društvo, 3. in 4. april 2009.

TEMELJNI VIRI

- GWINNUTT CL, GWINNUTT M. Clinical Anaesthesia: Lecture notes 5th ed. Wiley – Backwell Publishing 2016.

DODATNI VIRI

- Barash PG, Cahalan MK, Cullen BF, Stock MC, Stoelting RK. Clinical Anesthesia 8th Edition. Wolters Kluwer Health 2017.

Cilji in kompetence:

Študent pri izbirnem predmetu razširjeno in poglobljeno obravnava ozko izbrano temo iz celotnega obsega vsebin izbranega predmeta. Obravnava, presega raven obravnave v učbeniku. Pri izbranem predmetu študent utrjuje znanja in veščine, potrebne za samostojno delo in razčlenjevanje posameznih problemov na osnovi podatkov, dobljenih iz sodobne strokovne literature. Hkrati s tem utrjuje znanja in veščine, potrebne za samostojno iskanje sodobnih virov podatkov iz izbranega področja, njihovo razčlenjevanje, analizo in predstavitev. Cilj je priprava študenta na samostojno obravnavo in predstavitev posameznih tem na osnovi tekočih dogajanj v stroki.

Objectives and competences:

Chosen subject out of the electives is studied profoundly. Knowledge about the subject extends the matter given in the course book. Thus, student revise obtained knowledge and skills needed for independent work and problem analyse. Student gains experience how to look for newest data on the chosen field and on the basis of acquired modern data from professional literature learns how to classify, analyse and present them. Goal is to prepare student for competent interpretation and presentation of cutting edge professional themes.

Predvideni študijski rezultati:

Znanje in razumevanje:

Anestezija: Intravenski opijadni analgetiki, mišični relaksanti in nadzor mišične relaksacije, propofol, tiopental, etomidat, sevofluran, lokalni anestetiki Spinalna anestezija, epiduralna anestezija. Nadzor bolnika med anestezijo (EKG monitor, Krvavo in nekrvavo merjenje krvnega tlaka, kapnografija, pljučni zagoditveni kateter, merjenje minutnega volumna srca z metodo PICCO, merjenje minutnega volumna srca z metodo LIDCO), anestezija pri zvišanem znotrajlobanjskem tlaku.

Intenzivna terapija: Parenteralna prehrana, umetna ventilacija, sepsa in septični šok, hipovolemični šok, kardiogeni šok, akutna ledvična odpoved, zdravljenje bolnikov s poškodbo glave, možganska smrt. Zdravljenje bolečine: zdravljenje kronične maligne bolečine. Zdravljenje kronične bolečine mišično skeletnega sistema, zdravljenje bolečine pri herpes zosteru in postherpetične nevralgije, zdravljenje kronične bolečine z medikamentoznimi blokadami.

Prenesljive/ključne spretnosti in drugi atributi:

Anestezija: Predihavanje z dihalno masko in uporaba ročnega dihalnega balona

Uporaba orofaringealnega tubusa, laringealne maske in orotrahealne intubacije

Vstavev venske kanile

Merjenje osrednjega venskega tlaka

Intended learning outcomes:

Knowledge and Understanding:

Anaesthesiology: intervene analgesic opiates and, muscle relaxants and supervision of muscle, propofol, thiopental, etomidat, sevofluran, local anaesthetic, Spinal anaesthesia, epidural anaesthesia. Monitoring of the patient during anaesthesia (ECG monitor, blood pressure measurement, invasive and non-invasive blood pressure measurement, capnography, pulmonary catheter, heart volume measurement per minute by PICCO method, heart volume measurement by LIDCO method) anaesthesia at risen intracranial pressure.

Intensive therapy. Parenteral diet, artificial ventilation, sepsis and septic shock, acute renal failure, treatment of the patients with head injuries, cerebral death.

Pain management and treatment of chronic malignant pain. Treatment of chronic pain of muscle skeletal system, herpes zoster pain management and post herpetic neuralgia, chronic pain management by medicament pain blockades.

Transferable/Key Skills and other attributes:

Anaesthesia: ventilation with breathing mask and application of manual respiratory ballon.

Application of oropharyngeal tube, laryngeal mask and orotracheal intubation.

Insertation of the vein cannula.

Measurements of middle vein pressure.

Invasive and non-invasive blood pressure measurement.

Nekrvavo in krvavo merjenje krvnega tlaka Vrednotenje pulznega oksimetra, kapnografije in plinske analize arterijske krvi Faze splošne anestezije (uvod, vzdrževanje, zbujanje) Spinalna in epiduralna anestezija Priprava in redčenje zdravil Priprava in menjava infuzijske raztopine Intenzivna terapija: umetno predihavanje kritično bolnega bolnika, uporaba vazoaktivnih učinkovin, vzdrževanje ledvične funkcije, nadomeščanje tekočin in elektrolitov. Terapija bolečine: uporaba opijatnih analgetikov pri bolniku z rakom (zdravila in poti vnosa), uporaba neopijatnih in opijatnih analgetikov pri zdravljenju kronične nemaligne bolečine. Zdravljenje kronične bolečine z metodo TENS. Indikacije za medikamentozne blokade pri bolnikih s kronično bolečino.	Evaluation of oximeter puls, kapnography, and gas analyses of arterial blood. Stages of general anaesthesia (introduction, maintenance, wakening). Spinal and epidural anaesthesia. Preparation and dilution of drugs. Preparation and replacement of infusion solution. Intensive care: artificial ventilation of critically ill patient, usage of vasoactive substances, renal function maintenance, replacement of liquids and electrolytes. Pain therapy: administration of opiate analgetics in patients with cancer, (drugs and ways of their application), administration of nonopiates and opiates analgetics in treatment of chronic non-malignant pain. Treatment of chronic pain with TENS method. Indications for drug blockades in patients with chronic pain.
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Metode poučevanja in učenja:

Praktično delo na oddelku pod mentorstvom.

Študenti bodo v okviru izbirnega predmeta sodelovali pri kliničnem delu na Oddelku za anestezijo, intenzivno terapijo in terapijo bolečin v SB Maribor v naslednjem obsegu: 1 dan na anesteziji v operacijski dvorani, 1 dan v enoti intenzivne terapije in 1 dan v ambulantni za zdravljenje bolečine in 2 dni po lastni izbiri.

Learning and teaching methods:

Practical work in department under the supervision of mentor. Students will assist in the clinical work in the Department for Anaesthesiology, intensive therapy and pain management in Clinical Hospital Maribor as follows:

One day student will spend in the operating theatre observing administration of anaesthesia, one day in the intensive care unit and one day in the outpatient surgery for pain management.

Students choose two days according to their wish.

Načini ocenjevanja:

Delež (v %) /

Share (in %)

Assessment methods:

Način (pisni izpit, ustno izpraševanje, naloge, projekt)		Type (examination, oral, coursework, project):
Izdelava seminarske naloge in zagovor	50	Formation of coursework assignment and its defence
Ustni izpit	50	Oral examination
ŠTUDIJSKE OBVEZNOSTI ŠTUDENTOV:		ACADEMIC OBLIGATIONS OF STUDENTS:
- prisotnost na seminarjih - praktično delo na oddelku - prisotnost na predavanjih		attendance at coursework practical work at a ward attendance at lectures
POGOJI ZA PRISTOP K POSAMEZNEMU PREVERJANJU ZNANJA:		REQUIREMENTS FOR ACCESS TO INDIVIDUAL KNOWLEDGE CHECKING:
- opravljen seminar - prisotnost na seminarjih - praktično delo na oddelku - prisotnost na predavanjih		completed coursework attendance at coursework practical work at a ward attendance at lectures

Reference nosilca / Course coordinator's references:

JOŠT, Anton, BAN, Boris, KAMENIK, Mirt. Modified patient-controlled remifentanyl bolus delivery regimen for labour pain. *Anaesthesia*, ISSN 0003-2409, Mar. 2013, vol. 68, issue 3, str. 245-252, ilustr.
<http://onlinelibrary.wiley.com/doi/10.1111/anae.12038/pdf>, doi: 10.1111/anae.12038. [COBISS.SI-ID 4607039], [JCR, SNIP, WoS do 7. 8. 2013: št. citatov (TC): 2, čistih citatov (CI): 2, normirano št. čistih citatov (NC): 1, Scopus do 3. 7. 2013: št. citatov (TC): 2, čistih citatov (CI): 2, normirano št. čistih citatov (NC): 1]

MOLLER PETRUN, Andreja, KAMENIK, Mirt. Bispectral index-guided induction of general anaesthesia in patients undergoing major abdominal surgery using propofol or etomidate : a double-blind, randomized, clinical trial. *British Journal of Anaesthesia*, ISSN 0007-0912, 2013, vol. 110, no. 3, str. 388-396, ilustr.
<http://bja.oxfordjournals.org/content/110/3/388.long>, doi: 10.1093/bja/aes416. [COBISS.SI-ID 4593983], [JCR, SNIP, WoS do 18. 12. 2013: št. citatov (TC): 1, čistih citatov (CI): 1, normirano št. čistih citatov (NC): 0, Scopus do 19. 12. 2013: št. citatov (TC): 2, čistih citatov (CI): 2, normirano št. čistih citatov (NC): 1]

ZORKO, Nuška, MEKIŠ, Dušan, KAMENIK, Mirt. The influence of the Trendelenburg position on haemodynamics: comparison of anaesthetized patients with ischaemic heart disease and healthy volunteers. *Journal of international medical research*, ISSN 0300-0605, 2011, vol. 39, no. 3, str. 1084-1089.