

SPINE AND SPINAL CORD INJURIES

GENERAL INFORMATION

Course coordinator	Assoc. Prof. Ivan Hećimović, MD, PhD
Assistant/Associate	Prof. Slavica Kvolik, MD, PhD Assoc. Prof. Saša Rapan, MD, PhD Asst. Prof. Mira Kadojić, MD, PhD
Study Programme	Integrated undergraduate and graduate university study of Medicine
Status of the course	Elective
Year of study, semester	5th year, 10th semester
ECTS	2
Workload (hours)	Lectures (12); Seminars (9); Exercises (4)
Expected number of students	30

COURSE DESCRIPTION

Course objectives

1. Adopting the basic terms of spinal neurotraumatology, understanding the meaning of spine and spinal cord traumatology (medical, health-economic, individual-psychological, social, etc.) and getting to know the basic epidemiological features of vertebro-medullary traumatology.
2. Connecting knowledge from anatomy, pathology and pathophysiology and from basic clinical disciplines with knowledge about the effect of mechanical loading forces on the spine and spinal cord.
3. Understanding the relationship between mechanical pathomorphological damage in the area of the spine / spinal cord and the consequent pathophysiological changes in the traumatized spinal cord and spinal nerve roots.
4. Get to know the mechanisms of the formation of different forms of traumatic damage to the spine / spinal cord.
5. Acquire knowledge about the possible influence of surgical and non-surgical treatment on pathomorphological damage and traumatically altered spinal cord / spinal nerve roots.
6. Understand the possibilities of the influence of rehabilitation on the recovery of the injured.

Enrolment requirements and entry competencies

Passed exams of previous years of study.

Learning outcomes at the Programme level

1.2.,2.1.,3.1.

Learning outcomes (5-10)

After passing the exam from this course, the student will be able to:

1. To explain the basic concepts of biomechanics of the spine and to interpret the concepts of stability and instability of the spine as well as to explain the meaning of individual anatomical structures of the spine in maintaining stability.
2. To associate the types of pathomorphological damage of the spine with the pathomorphological/pathophysiological changes of the spinal cord and the clinical signs/symptoms of the injured.
3. Describe the pathophysiological changes in the spinal cord after traumatic damage.
4. State the classifications of spine and spinal cord injuries and explain their clinical relevance.
5. Describe the clinical syndromes in an injured person with an injured spine and spinal cord.
6. Describe the basic features of radiological images of post-traumatic damage to the spine and spinal cord.
7. Correlate clinical signs and symptoms with radiologically determined changes in the spine and spinal cord.

8. To define the clinical procedure with injured persons in whom it is suspected that there is, or it is obvious that there is, damage to the spine and spinal cord.
9. State the principles of conservative (non-surgical) and surgical treatment, as well as the possibilities and scope of individual treatment methods, as well as the principles of early rehabilitation of the injured.
10. Distinguish between traumatic injuries of the spine and spinal cord that require urgent surgical treatment from those that do not require urgent surgical treatment.

Course content

Lectures: Introduction to spinal neurotraumatology, Basics of functional anatomy and biomechanics of the spine, - basics of biomechanics of spinal injuries, Pathological and pathophysiological changes of the traumatized spine and spinal cord, Treatment of spinal cord and spinal cord injuries, Rehabilitation after spinal cord and spinal cord injuries, Basics of forensic evaluation after spine and spinal cord injuries

Seminars: Modern neuroradiological diagnosis of spinal cord and spinal cord injuries, Clinical examination of injured persons with spinal cord and spinal cord injuries, Multidisciplinary approach to diagnosis and treatment of spinal cord and spinal cord injuries, Treatment of pathological spinal fractures, Clinical and radiological results of treatment, Late complications of spinal cord and spinal cord injuries

Exercises: Clinical propaedeutics, clinical and radiological presentations of cases, teaching at the patient's bedside, cabinet of clinical skills, presentation of the forensic medical judgment procedure

Mode of teaching

Lectures; Seminars; Exercises

Student obligations

Attending all forms of classes is mandatory, and the student must pass all knowledge tests. A student can excuse himself from 30% of each form of teaching. Undone exercise must be graded.

Monitoring student work (*alignment of learning outcomes, teaching methods and grading*)

Teaching activity	ECTS	Learning outcome	Student activity	Assessment methods	Grade points	
					Min.	Max.
Attending classes	0,5	1-10	Attendance at classes	Record	5	20
Seminars, exercises	0,5	1-10	Attendance and active participation in seminars and exercises	Presentation	15	30
Final exam	1,0	1-10	Studying for the oral exam	Oral exam	30	50
Total	2				50	100

Calculation of final grade:

Students who achieved 30 or more points in the final exam, the points obtained in the final exam are added to the grade points obtained during the class, and this sum constitutes the final grade. Since the study program schedule descriptive assessment of elective courses, the course coordinator awards the grade "passed" to a student who achieves 50 or more grade points in the course.

Required reading (available in the library and through other media)

Title	Number of copies in the library	Availability through other media
<ol style="list-style-type: none"> 1. Tomislav Šoša i suradnici. Kirurgija. Medicinska biblioteka, Naklada Ljevak d.o.o. Zagreb, 2007. 2. Ivan Bradić i suradnici. Kirurgija. Medicinska naklada, Zagreb,1995. 3. Bilješke i materijali s predavanja 	10	
Additional reading		
<ol style="list-style-type: none"> 1. H. Herkowitz, J. Dvorak, et al. The Lumbar Spine, Lippincot, Williams and Wilkins, 2004 		
Course evaluation procedures		
E-learning is not included in the norm of subject hours, but it is used in teaching and contains links to various pages, video and audio materials available on the website.		
Note /Other		
E-učenje ne ulazi u norma sate predmeta, ali se koristi u nastavi i sadrži poveznice na različite stranice, video i audio materijale dostupne na mrežnim stranicama.		