University in Zagreb School od Dental Medicine

PhD program at School of Dental Medicine

Academic year 2021./2022.

Course title Diagnosis of chronic orofacial pain and methods of somatosensory testing in the orofacial region

Department Department of Removable Prosthodontics

Adress Gundulićeva 5

Total ECTS points 5

Course leader Professor Iva Alajbeg

Course associates Assistant Professor Marijana Bosnar Puretić

Teaching plan

	No. classes
Lecture	7
Seminar	10
Practical	8
Total	25

1 class = 45 minutes

Course description

Orofacial pain is a significant health problem in the general population with a marked influence on the daily functioning of the individual. It is a symptom of a number of disorders affecting various structures of the head, face and oral cavity, but often its cause remains unknown. Among the most significant disorders that cause pain in the orofacial area are temporomandibular disorders (TMD), and in everyday neurological practice these are trigeminal neuralgia and headaches.

For years, the recognition of TMP has been a controversial issue, primarily due to the fact that the term temporomandibular disorder encompasses many symptoms of different etiopathogenesis, resulting in an unfavourable diagnosis and inadequate therapeutic approach. Today, the only thing that is certain is that the etiopathogenesis of these disorders has not been fully elucidated. The diagnosis of TMP is based on history and the DC/TMD protocolsince the information obtained from the patient during the examination can sometimes be the key for correct diagnosis. Additional diagnostic evaluation includes computed tomography scan (CT) and magnetic resonance imaging (MRI).

The diagnosis of headaches in terms of neurophysiologic and neuroradiologic diagnostic methods include computer tomography scan (CT), magnetic resonance imaging (MRI), with cerebral vascular angiography, electroencephalograph (EEG), ultrasonic methods of presentation of cerebral circulation, electrophysiological methods - visual evoked interaction potential, auditory evoked potentials, blink reflex and EMNG.

During the course, the acquisition of theoretical knowledge about the possible causes of orofacial pain disorders (with emphasis on TMD and various types of headaches) and currently available methods that we use in their diagnosis and treatment is expected. Also, the purpose of this course is to teach about the methods used to evaluate motor activities in the orofacial region and to get acquainted with the methods for assessing oral sensory abilities.

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Learning outcomes

1. To discuss different types of orofacial pain disorders and to group temporomandibular disorders with regard to the currently accepted protocol for their diagnosis
2. To apply the DC/TMD protocol during the clinical examination of patients with TMD 3. To present the available data about the use of electromyoneurographic methods in the diagnosis of orofacial pain
4. To investigate the current available dana about of oral sensory testing methods and to critically evaluate the meaning of their use
5. To assess, based on the presented case report, the chronology of the clinical examination, additional diagnostic methods and therapy for a specific patient

Course contet

Lecture

	Lecture topics	**Number of classes/hours**
1.	Classification and differential diagnosis of orofacial pain	1
2.	The etiology and pathogenesis of temporomandibular disorders	1
3.	Perspectives in the clinical diagnosis of temporomandibular disorders	1
4.	Migraine and tension headache - etiology and pathogenesis	1
5.	Management of patients with various orofacial painful disorders	1
6.	Electromyographic, neurosonological and psychometric methods in diagnosis of orofacial pain	1
7.	The role of sensory receptors in the oral region and the influence of aging on the decline of sensory abilities	1

1 class= 45 minutes

Seminari

	Seminar topics	Number of classes/hours
1.	Protocols for clinical examination of patients with temporomandibular disorder	2
2.	Psychometric methods for evaluation of pain, disability, anxiety and depression	2
3.	The role of electromyoneurographic methods - the blink reflex in diagnosis of orofacial pain	2
4.	The role of electromyography in the control of masticatory function system and in the control of applied therapy	1

5.	The methods of measuring oral sensitivity (eg. two-point discrimination test, thermal sensitivity test, electroaesthesiometry, oral stereognostic ability test)	2
6.	The problem of standardization and repeatability of measurements, analysis and interpretation of measurements, discussion of the applied methods used	1

1 class= 45 minutes

Vježbe

	practicals topics	Number of classes/hours
1.	Case report (patient with temporomandibular disorder: description of clinical case, clinical examination, MRI of temporomandibular joints, electromiography of masticatory muscles, differential diagnosis, discussion)	2
2.	Case report (patient with headache, description of clinical case, diagnostic procedures, EMNG and blink reflex)	2
3.	Demonstration of the oral stereognostic ability test (according to age, dental status etc.	2
4.	Standardization and repeatability of measurements, analysis and interpretation of measurements, discussion of the applied methods used	2

1 class = 45 minutes

Literature

1. Manfredinin D. Current concepts on temporomandibular disorders. London, Berlin, Chicago: Quintessence publishing; 2010.
2. Sommer C. Neuralgic and Idiopathic Facial Pain. U: Türp JC, Sommer C, Hugger A, ur. The Puzzle of Orofacial Pain. Integrating Research into Clinical Management. Pain Headache. Basel: Karger, 2007, 153-64.
3. Okeson JP. Temporomandibularni poremećaji i okluzija. Zagreb: Medicinska naklada; 2008. 4. Svensson P. Muscle pain in the head: overlap between temporomandibular disorders and tension-type headaches. Curr Opin Neurol. 2007;20:320-5.
5. Graff-Radford SB. Temporomandibular disorders and headache. Dent Clin North Am. 2007;51:129-44.
6. Zakrzewska JM, Lopez BC, Kim SE, Varian EA, Coakham HB. Patient satisfaction after surgery for trigeminal neuralgia--development of a questionnaire. Acta Neurochir (Wien). 2005;147:925-32.

CV (*curriculum vitae*) and bibliography of course leader

PERSONAL INFORMATION

First and last name: Iva Alajbeg
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SCIENTIFIC AND PROFESSIONAL CAREER

1998 to 2002 scientific novice at the Department of Prosthodontics
2001 - 2004 Specialist training in Prosthodontics at University Clinic Zagreb
2003 to 2006 senior research assistant at the Department of Prosthodontics
2004 Specialization of Prosthodontics
2006 to 2011 Assistant professor at the Department of Prosthodontics
2010 to 2019 Scientific Adviser
2011 to 2016 Associate Professor
2016 Full Professor
2019 Scientific Adviser with tenure

PARTICIPATION IN SCIENTIFIC AND ORAL HEALTH PROJECTS

Most important scientific projects

1. 2020 - 2024: project financed by the Croatian Science Foundation “Genetic polymorphisms and their association with temporomandibular disorders “ – **project leader**
2. 2015 – 2019: project financed by the Croatian Science Foundation “The Role of Oxidative Stress and Opiorphin in Temporomandibular Disorders “ – **project leader**

3. 2019., 2020. ,2021.: projects financed by the University of Zagreb “Salivary opiorphin in response to experimental painful and unpleasant stimuli in patients with temporomandibular disorders” – **project leader**

RESEARCH AND PROFESSIONAL ACTIVITIES

- scientific research and participation in research and professional congresses in Croatia and abroad -**78** "in extenso" scientific papers (**30** CC/SCI indexed); author and co-author of 79 conference abstracts;
- **381** citations; h-index **11**
- **head** of the **Reference center for temporomandibular disorders** at the Clinical Hospital Center Zagreb, Croatia
- **author** of the Croatian version or Diagnostic Criteria for Temporomandibular Disorders: Assessment Instruments which are available on INfORM consortium sites

AWARDS

1. First author of the best scientific paper in 2020 at the School of Dental Medicine, University of Zagreb
2. Award of the School of Dental Medicine, University of Zagreb for the best course for the academic year 2019/2020 (course „Occlusion“, leader of the course Iva Alajbeg) 3. Award of the School of Dental Medicine, University of Zagreb for the best e-learning course for the academic year 2013/2014 (e-course "Bruxism", leader of the course Iva Alajbeg) 4. The University of Zagreb Award for the Best E-course for the academic year 2013/2014 (e course "Bruxism")

5. Best Oral Presentation Prize at the “30th Annual Conference of the European Prosthodontics Association” in London, UK, 2006
6. Scientific award of the Academy of Medical Sciences of Croatia "Borislav Nakić" (2005) 7. Best Poster Presentation Prize at the “26th Annual Conference of the European Prosthodontics Association” in Cavtat, Croatia, 2002
8. Co-author of paper awarded with the best poster presentation prize at the II. Croatian Congress of Pharmacology with International Participation 2001

Teaching activities

- involvement in the undergraduate and graduate teaching at the School of Dental Medicine; "Occlusion" (course leader), "Removable prosthodontics", "Preclinical removable prosthodontics” and "Temporomandibular Disorders"
- Dental medicine program in English: leader of courses “Occlusion” and “Temporomandibular disorders”
- master program course leader: "Occlusal splints - indication, application and fabrication" and "Bruxism"
- Ph.D. program course leader: "Methods for somatosensory and motor analysis in orofacial region" and " Diagnosis of temporomandibular disorders and chronic orofacial pain "

CONTRIBUTION TO THE TEACHING PROCESS

1. participated in the drafting of the Action Plan for Quality Improvement of the Postgraduate Doctoral Study of Dental Medicine for the academic year 2017/2018. - 2021/2022
2. co-author of the document “Self-evaluation of the School of Dental Medicine, University of Zagreb”, created for the period 1.10.2009-1.10.2014.

MEMBERSHIPS IN PROFESSIONAL SOCIETIES

member of the Academy of Medical Sciences of Croatia (from 2018)

International Association of Dental Research (IADR), European Association of Oral Medicine (EAOM), Executive Board Committee of Croatian Prosthodontics Association and Editorial Board of Acta Medica Croatica, Croatian Dental Chamber, Croatian Medical and Biological Engineering Society

REVIEWS IN RESPECTABLE INTERNATIONAL SCIENTIFIC JOURNALS

Reviews for following scientific journals (Computer Methods and Programs in Biomedicine (CC, SCI), Journal of Oral Rehabilitation (CC, SCI), Acta Odontologica Scandinavica (CC; SCI), Oral diseases (CC; SCI) , Acta Stomatologica Croatica (Pubmed), Acta Medica Academica (PubMed), Case Reports in Dentistry (PubMed), Journal of Infection Control, Journal of Advanced Prosthodontics, International Journal of Dentistry, Journal of Alternative and Complementary Medicine (CC; SCI)).

Master thesis examiner at McGIll University, Montreal, Canada.

External examiner for the PhD thesis at McGIll University, Montreal, Canada.

MAJOR SCIENTIFIC COLLABORATIONS

Prof. Noshir Mehta, Craniofacial pain, Tufts University School of Dental Medicine, Boson, MA, USA

Prof. Ambra Michelotti, Temporomandibular disorders and orofacial pain, University of Naples Federico II, Italy

Prof Yves Boucher, Laboratoire de Neurobiologie Orofaciale, UFR Odontologie, Université de Paris, France

Prof Ana Miriam Velly, McGIll University, Montreal, Canada.