

Study of Dentistry in Rijeka Today and Tomorrow

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Study of Dentistry
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Introduction

The anniversary of the institution in which one works induces those interested in their work to carry out an analysis, a retrospective and to look forward to the future, or in some other way to evaluate the work in which they are engaged. If the institution in which they work is a scientific, teaching and health related institution then the main problem is to avoid leaving out any important detail.

It is with satisfaction that I can say that at the moment scientific work and teaching is on a high level, and we believe that next year the same will be the case for the third, no less important part, health.

All dentistry courses are divided into 5 departments, as follows:

- Department of Dental Diseases.
- Department of Oral Diseases.
- Department of Dental Prosthetics.
- Department of Clinical Pedodontics.
- Department of Oral and Maxillofacial Surgery.

Department of Dental Diseases

Teaching activity

Teaching is organised within the framework of the subject Dental Pathology, and starts in the fourth semester and lasts until the last, the tenth semester. All forms of teaching are planned, including pre-clinical and clinical practice, amounting to 385

hours, 50 seminars and 75 hours of lectures. Dental Pathology is a basic and specialist field of dental medicine which includes:

- Developmental and morphological irregularities of hard dental tissue.
- Diseases of the endodontium
- Periradicular and periapical diseases.
- Development and use of materials in therapy.

Teachers and coworkers

Head: Ivana Brekalo-Pršo, D.D.S., Ph.D.
Maja Kovačević, D.D.S., Ph.D.
Tomislav Tamarut, D.D.S., Ph.D.
Snježana Bešlić, D.D.S. Asistant, M.Sc.
Alen Braut, D.D.S. Assistant
Damir Šnjarić, D.D.S. Assistant
Davor Kuiš, D.D.S. Assistant
Jelena Horvat, D.D.S. Assistant
Hrvoje Gazdik, D.D.S. Assistant
Anja Sasso, D.D.S. Assistant

Scientific-research activity

A project, financed by the Ministry of Sciences and Technology of the Republic of Croatia, No. 062033, is currently in progress, entitled "Healing of the Dental Periapical Lesion". The Principal investigator is Maja Kovačević. The object of the investigation is the histopathological, histochemical and radiological examination of the success of different endodontic methods on an experimental dog model. Within the framework of this project 4

M.Sc. theses and one Ph.D. thesis will be completed.

Active cooperation is also continuing in the project, No. 062058, entitled "Biological effects of Dental Materials", with Sonja Pezelj-Ribarić as Principal Investigator, together with the Head of the Department, Ivana Brekalo-Pršo and one colleague. Following a study visit to the USA one doctoral candidate continued active cooperation in a project entitled "Genetics of Craniofacial Development" on which his Ph.D thesis will be completed.

Professional activity

At present four teachers are in the final phase of specialisation in Endodontics, which will enable them to negotiate next year for specialist work with the Public Health Institute. The Department organised a course of permanent education under the title "With what and how to replace the amalgam filling in distal areas", which was awarded 5 points by the Croatian Dental Chamber.

Department of Dental Prosthetics

Teaching activity

The Department has five courses as follows: Fixed Prosthetics, Mobile Prosthetics, Gnathology, Dental Materials and Gerodontology.

The course on Fixed prosthetics lasts for two pre-clinical semesters and five clinical semesters and teaches reconstruction of damaged and replacement of lost teeth by means of replacements fabricated from cast metals, metal covered with aesthetic materials or completely aesthetic replacements. The aim of the course is to acquaint students with all necessary theoretical and practical knowledge of the principles of grinding, protection of the stump, impression methods, registration of intermaxillary relations, and testing and cementing replacements. Particular attention is paid to correctly determining indications and plan of therapy, particularly in complex methods of fixed-prosthetic rehabilitation.

Knowledge and skill is acquired during lectures and seminars, and indirect work on preclinical phantoms and during clinical practice on patients, under the watchful eye of the Head of the practice. The

course lasts from IV to X semester and includes 240 hours of practice and 60 hours of lectures.

During the course on Mobile Prosthetics students receive theoretical and practical knowledge on the treatment of partial and complete edentulism and its consequences, the ability to compensate for lost natural teeth and resorption of parts of the alveolar ridge in edentulous and partially edentulous patients by the construction of biocompatible, functional and aesthetic optimal total dentures, partial dentures and combined fixed-mobile prosthetic replacements.

Students are taught theoretical and practical knowledge on technical and technological methods in the fabrication of mobile prosthetic replacements. They are acquainted with constructions and divisions of the articulator and taught to use the articulator for mean values, diagnosis and therapy of disorders of the stomatognathic system. During clinical practice students are also taught symptomatology and therapy of temporomandibular dysfunction, which they learn in the course on Gnathology. The course lasts from IV to X semester and includes 235 hours of practice, 40 hours of seminars and 25 hours of lectures.

Gnathology is a relatively new course which commences in the third semester of lectures, after which the student can join preclinical practice and seminars. The aim of the course is to train the student to understand mutual relations of the components of the stomatognathic system, giving theoretical and practical knowledge of geometry and conception of occlusion and articulation, positions and movements of the mandible, functional disorders of the stomatognathic system and diagnosis and therapy of temporomandibular dysfunction. Also to offer basic information on the functional and instrumental analysis of the stomatognathic system. The course is attended during the III and IV semesters and includes 15 hours of lectures, 15 hours of seminars and 15 hours of practice.

Dental Materials is a multidisciplinary course during the third and fourth semester. The aim of the course is to acquaint students with all materials used in the dental surgery and dental-technical laboratory. Students are also given information on basic physical, chemical, biomechanical characteristics and biocompatibility. After completing the course

the student has knowledge of the characteristics and use of materials needed for clinical work in all dental disciplines. The course consists of 15 hours of lectures and 30 hours of seminars.

Gerodontology is a multidisciplinary elective course which comprises 15 hours of lectures in the 8th semester. The object is to acquaint the student with the specifics of oral health in older populations and the specifics in diagnosis and therapy of oral diseases and changes through interdisciplinary approach. At the same time special emphasis is placed on this group of patients, who, because of their general state of health, partially and/or completely, depend on the help of others.

Teachers and coworkers

Principal: Ivone Uhač, Ph.D.

Fixed prosthetics

Head of course: Ivone Uhač, Ph.D.

Marica Šimunović-Šoškić, Ph.D.

Josipa Borčić, M.Sc.

Miranda Muhvić-Urek, M.Sc.

Robert AntoniĆ, D.D.S.

Mobile prosthetics

Head of course: Zdravko Delić, Ph.D.

Renata Gržić, Ph.D.

Daniela Kovačević, Ph.D.

Zoran Kovač, M.Sc.

Nataša Blečić, D.D.S.

Vlatka Mikić, D.D.S.

Gnathology

Head of course: Renata Gržić, Ph.D.

Dental materials

Head of course: Marica Šimunović-Šoškić, Ph.D.

Gerodontology

Head of course: Zdravko Delić, Ph.D.

Scientific research work

A project is currently in progress within the Department of Dental Prosthetics, financed by the Ministry of Sciences and Technology of the Republic of Croatia, No. 0062059, entitled "Posttraumatic Stress Disorder and Function of the Stomatognathic System". Principal Investigator of the project: Ivone Uhač. The object of the investigation is the aetiology of disordered function of the stom-

atognathic system with regard to neuroimmuno-endocrinology. Within the framework of this project one PhD thesis and one M.Sc. thesis will be completed.

There is also active cooperation in the project of the Ministry of Sciences and Technology "Analysis of the Forms and Function of the Stomatognathic System", No. 0065911, of which the Principal Investigator is Prof. Melita Valentić-Peruzović, and during which one Ph.D thesis will be completed.

Professional activity

At the Department of Dental Prosthetics training is given within a specialised programme for 5 candidates specialising in dental prosthetics. Particular attention is paid to patients with disorders of the stomatognathic system, for whom specific therapeutic protocol is selected. In June of this year a working course of permanent education was organised by the Department with the theme "Articulators and articulator techniques" which was awarded 5 points.

Department of Clinical Pedodontics

The Department of Clinical Pedodontics includes 5 courses as follows, Pedodontics, Orthodontics and Dental Morphology with Dental Anthropology, General and Social Dental Medicine and Orofacial Genetics.

Pedodontics is a part of general dental medicine which studies physiological and pathological events in the mouths and on the teeth of children, in order to enable correct growth and function of the orofacial system and prompt detection and treatment of dental diseases.

Students attend Pedodontics during the IV and V year of Dentistry study. Teaching includes 110 hours of lectures, 10 hours seminars and 45 clinical practice. Within clinical practice visits to nurseries are organised where a project is currently in progress on dental prevention and education.

Orthodontics is a specialised branch of dental medicine which studies the growth and development of teeth and jaws, and includes preventive and curative methods in order to achieve morpho-functional

accordance of the stomatognathic system. During the study of dental medicine, a course on Orthodontics is held during the last four semesters with a total number of 85 hours of lectures, 50 hours of seminars and 30 hours of preclinical and clinical practice. Because of the needs of Dentistry study and the Dental Polyclinic assistants are allowed to specialise in orthodontics in Zagreb. Clinical work with patients is possible after completing specialisation.

Teaching during the course on Orofacial Genetics comprises one semester, and is held during the fourth year of study, and comprises 15 hours of lectures. The programme includes basic genetic terms and principles of inheritance, and the correlation and effect of genetic abnormalities on the orofacial structure. Special attention is paid to abnormalities in the number of teeth, their size, shape and structure, and correlation between orofacial malformations and other congenital malformations. Apart from the above hare lip and cleft palate are also included and correlation between dermatoglyphs and dental structures.

The course Introduction to Dentistry begins in the first year of study, during which students are acquainted with historical aspects and the development of odontology and dentistry within the field of medicine, including organisation of dental health protection and the dentistry team. The teaching plan also includes election to the profession of dentist, conception of dentistry study, dentistry specialisation, FDI Declaration of Health for all up to 2000, deontology, and the Hippocratic Oath. The course lasts for one semester and includes 10 lectures and 5 seminars.

The course General and Social Dentistry is an elective course, in which interested students can enrol during the first year of study. The course analyses the development of the system of dental protection in Croatia, tasks and objectives of dental work (educational, preventive, curative) and economics and informatics in dentistry. Students are acquainted with the function of the Chamber of Dental Medicine as the umbrella organisation of dental medicine in the Republic of Croatia, and with the method of work of dental protection under governmental or local administration, and private dental practice.

Teachers and coworkers

Head: Marica Šimunović-Šoškić, D.D.S., Ph.D.

Pedodontics

Head of course: Laura Mady, Ph.D.

Assistants: Nataša Ivančić Jokić, D.D.S., M.Sc.

Danko Bakarčić, D.D.S., M.Sc.

Orthodontics

Orofacial genetics

Head of course: Prof. Mario Legović

Assistants: Silvio Fereri, Ph.D.

Barbara Mady, M.Sc.

Andrej Katalinić, D.D.S.

Morphology of the teeth with dental anthropology

Introduction to dentistry

General and social dentistry

Head of course: Ante Ivanković, Ph.D.

Assistants: Nina Varljen-Frleta, D.D.S.

Andrej Katalinić, D.D.S.

Professional activity

In the Department of Clinical Pedodontics great care is paid to working with children with developmental disorders, and also preventive programmes. Three professional projects are presently in progress:

- Project in cooperation with CroADS: "Dental Preventives and Education".
- Project: "Prevention of Caries and Promotion of Oral Health". Programme supported by PGŽ.
- Project: "Dental Preventives in Children with Developmental Disorders"

The Department are organising a course entitled "Selected Chapters from Clinical Pedodontics and Orthodontics" to be held on 16 October 2004 at the Medical Faculty in Rijeka. The course has been awarded 3 points by the Chamber.

Department of Oral Diseases

Teaching activity

The Department of Oral Diseases holds teaching in four courses as follows: Oral Medicine, Periodontology, Oral Hygiene and Dental Propedeutics and Diagnostics.

The course on Oral Medicine includes:

- Training students for practical work on patients with oral diseases.
- Knowledge of the role of the oral mucous membrane in the function of the stomatognathic system.
- Contemporary knowledge of oral diseases, possibilities, their diagnosis and treatment.
- Synthesis of knowledge to date on general medicine and application in oral medicine.
- Acquainting students with the mechanisms of correlation between the oral mucous membrane and the organism as a whole.
- Training of students with regard to oral diseases conditioned by local, irritating factors and microorganisms.
- Training of students in the role of oral diseases in the occurrence of general symptoms in the organism of man.
- Preparation of students for independent work on patients in the diagnosis of diseases of the oral mucous membrane.
- Preparation of students for independent choice of therapeutic methods and procedures in treatment.
- Teaching consists of 45 hours of lectures and 60 hours of clinical practice.

Periodontology is a dental discipline in which students are acquainted with the prevention and aetiology of periodontal diseases, diagnosis and symptomatology, therapeutic measures, possibilities and limits of periodontal therapy. The object is to prepare students for clinical teaching and practical work on patients. Teaching is held from the VI to X semester with 45 hours of lectures, 15 hours of seminars and 75 hours of practice.

The aim of the course on Dental Propedeutics and Diagnostics is to acquaint the student, by means of interdisciplinary teaching of all dentistry subjects, lectures and seminars, with the equipment of the dental surgery and laboratory, and with instruments for work and methods of work in the mouths of patients and the need for thorough sterilisation (surgery, apparatus, instruments). The student must also acquire knowledge of protective measures during work - including protection of the patient; the first dental examination of the patient, diagnostic methods in dentistry and use of equipment and instruments in the treatment of diseases of the teeth and

oral cavity. Part of the course consists of learning Croatian and Latin terms in the dentistry profession. The course is held during the III semester with 15 hours of lectures.

The basic aim of teaching Oral Hygiene in the second year of Dentistry study is to train students to understand that one of the most important factors in preserving good oral health is correct, and thus effective, oral hygiene. The course includes 15 hours of lectures and 15 hours practice.

Teachers and coworkers

Head: Sonja Pezelj-Ribarić, D.D.S., Ph.D.

Oral medicine

Head of course: Sonja Pezelj-Ribarić, D.D.S., Ph.D.

Domagoj Maričić, M.Sc.

Irena Glažar, D.D.S.

Periodontology

Head of course: Nada Cindrić, Ph.D.

Gordan Cindrić, M.Sc.

Miljena Giroto, M.Sc.

Ljerka Jindra, M.Sc.

Dental propedeutics and diagnostics

Head of course: Sonja Pezelj-Ribarić, D.D.S., Ph.D.

Domagoj Maričić, M.Sc.

Irena Glažar, D.D.S.

Oral hygiene

Head of course: Sonja Pezelj-Ribarić

Domagoj Maričić

Irena Glažar

Scientific research activity

The following investigations are carried out in the Department within Project No. 0062058, approved by the Ministry of Sciences and Technology:

1. Microbiological analysis of clinical samples from the oral cavity: isolation and identification of the most frequent aerobic and anaerobic bacteria; determination of the resistance of isolated species to antibiotics: determination of the minimal inhibitory concentration by E-test.
2. Antimicrobial activity of endodontic materials: agar diffusion method (ADT), direct contact test (DCT), suspension survival test (BST).

3. Establishment of primary cell cultures of human fibroblasts; examination of cytotoxicity to eucariotic cells on established primary and standard cultures of fibroblasts (L929); examination of mutagenicity to Salmonella typhimurium (Ames test).
4. The effect of dental materials on biological function of macrophages: intraperitoneal inoculation material Balb/c on mice; examination of the function of peritoneal macrophages: adherence to glass surfaces; phagocytosis of thermally analysed blastoconidia *C. albicans*; microbicide activity (Killing test); metabolic activity by application of NBT-test; production/development of a cytospin preparation for further immunocytochemical analysis (F4/80).
5. Determination of (pro)inflammatory markers in the oral cavity: detection of (pro)inflammatory cytokines (IL-6, TNF- α) in the saliva of patients with pathological changes of the oral cavity by means of commercial EIA kits; determination of the concentration of prostaglandin (PGE₂) and nitrogenous monoxide (Griess's reaction) in saliva; detection of the same (pro)-inflammatory factors in a supernatant of primary and continuous cell cultures infected with characteristic bacterial isolates.

Apart from the above investigations work is in progress on the study of the therapeutic effects of the soft laser on stimulation of the salivary glands, and also study of the pathogenesis of periodontal diseases.

Professional activity

It is with satisfaction that I can stress that all teachers of the Department are specialising in the field of Oral Medicine and Periodontology. After

specialisation they will be qualified to work as specialists at the Dental Polyclinic of the Medical Faculty.

During 2004 the Department has organised two professional meetings: "Lasers in Dental Medicine" and "Initial Periodontal Therapy" a course which has been awarded 5 points.

Department of Oral and Maxillofacial Surgery

Teachers and coworkers

Head: Prof. Marijan Car
 Head of course: Prof. Pavel Kobler
 Vladimir Ahel, D.D.S., M.Sc.
 Willy Kocjan, D.D.S., M.Sc.
 Tomislav Čabov, D.D.S., M.Sc.
 Neven Ernjak, D.D.S.

Maxillofacial surgery

Head of course: Prof. Marijan Car
 Prof. Mirna Juretić
 Robert Cerović, D.D.S., M.Sc.
 Ante Lučev, D.D.S., M.Sc.
 Margita Gobić-Belušić, D.D.S.

Dental implantology

Head of course: Prof. Marijan Car

Professional activity

Suturing techniques - working course September 25, 2004.

Scientific activity

Evaluation of surgical treatment of malignant tumours of the head and neck.