UNIVERSITÀ
DEGLI STUDI DI MILANO-BICOCCA

COURSE SYLLABUS

Optics of The General Contactology 1

2223-2-E3002Q011-E3002Q020M

Aims

The course aims to acquire the knowledge, skills and competences to independently manage the application of soft contact lenses.

the student will acquire the latest scientific technological notions and knowledge of contactology and skills for the clinical and interpretative use of both basic and advanced instrumental technologies as well as developing the skills to use contact lens application and control techniques.

Contents

1. management of refractive conditions with soft contact lenses

2. knowledge concerning the geometric, physical and physiological relationship between lac and anterior ocular external segment

3 knowledge of the various types of soft lac and related materials

4. application methods of soft contact lenses after selection of the candidate and accurate ocular, parametric and physiological evaluation

5 in-depth study of the tear film and its relationship with lac. study of the marginal dry eye

6. application criteria of spherical, aspherical, toric, multifocal and special applications

7. to prevent and manage complications induced by soft lac , also through the use of grading scales

8. presentation and discussion in the classroom of clinical cases

9. Managment of myopia progression

Detailed program

Introduction to contact lenses , glossary of technical terms

Basic topics:

History and evolution of contact lenses.

Elements of anatomy and physiology of the cornea and of the structures related to it. Overview of morphology and microscopy

electronics of the cornea and conjunctiva.

Corneal oxygenation and hypoxic phenomena. Overview of immunology and inflammatory processes.

Geometric features of contact lenses, contact lens optics.

preliminaries

Initial evaluation. The anamnestic interview. Pre-application assessment: General indications for the use of lenses a

contact. Preliminary measurements, evaluation of refractive status, evaluation of binocular vision, examination in

slit lamp, vital dyes. Clinical significance and evaluation of the tear film. Interaction between tear film and

contact lens. Eyelid and blinking abnormalities, anomalies of the mucinous component and of the

lipid component of the tear film. Interpretation of the interference figures of the tear film.

Advanced instrumental techniques for the detection of ocular characteristics

Corneal topography

pachymetry

Endothelial microscopy

Aberrometry and wave fronts analysis

Contact lenses in hydrogel

Conventional hydrogel materials, silicone hydrogel materials

Application aspects of soft contact lenses: properties of materials, classification, indications for the use of lenses

soft, basic ocular assessments and measurements, application procedures, features and application evaluations,

times of port and adaptation. Post application controls.

Study of soft contact lenses customized, disposable and frequently replaced in hydrogel.

Silicon Hidrogel contact lenses

Structure and properties of materials. Lenses for continuous and prolonged use. Physiological condonations and application criteria.

Soft biomimetic and biocompatible contact lenses

Structure and properties of materials. Physiological considerations and application criteria

Correction of astigmatism with soft toric contact lenses.

Properties of materials. Indications for the use of toric contact lenses Stabilization systems. Toric lenses

soft customized

Correction of presbyopia with soft contact lenses

Structure and properties of materials. Preliminary evaluation and selection of the bearer. Corrective options of the

presbyopia with contact lenses. Bifocal and multifocal soft contact lenses and their geometries.

Complications in relation to the use of soft contact lenses

classification and management of complications, classification systems, grading scales Compliance and prevention

of complications Digital acquisition systems

Dry eye

Classification systems of dry eye. The optometric management of the marginal dry eye. Objective and

subjective evaluations of the marginal dry eye condition. Management of the condition: suitable polymers,

tear supplements and substitutes.

Managment of myopic progression with soft bifocal, multifocal and EDOF contact lenses

Prerequisites

ocular anatomy and physiology of the anterior segment, visual optics and geometrical optics.

since the course run in parallelism with the laboratory of contactology I, the student will apply knowledge and skills belonging to both the courses.

Teaching form

frontal lecturers, power pint presentation, videos and clinical cases presentationand discussion

Textbook and teaching resource

- power point presentation delivery to students at each lecture

: Clinical Contact Lens Practice , Bennet, LIppincott Williams&Wilkins

Contact Lenses, Phillips, , Butterworth Heinemann

educator's notes

Semester

first semester

Assessment method

Joint examination of modules 1 and 2.

Written exam using a computer platform composed of multiple choice questions and exercises related to the application and choice of contact lenses

Mandatory oral exam after passing the written test

there are no mid- term exam

Office hours

on appointment

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Sustainable Development Goals

GOOD HEALTH AND WELL-BEING | QUALITY EDUCATION