2. EVOLUTIONARY METHODS TO IDENTIFY THE OCULAR LYMPHATIC 1,61 1,61 SYSTEM

Author: Ciorba Nadejda

Scientific advisor: Cusnir Valeriu, MD, PhD, Professor, Department of Ophthalmology-Optometry, *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, Republic of Moldova

Introduction. Compared to blood vessels, lymphatics can be identified much harder in the human body, especially at the eye level. Lymphatics very often present an irregular, collapsed structure, which creates difficulty in their histological visualization. For a long time, lymphatics were identified based on histological criteria: absence of erythrocytes in the lumen, discontinuous basement membrane. However, these criteria aren't sufficient. The analysis of specialized literature provides information regarding new methods of detecting lymphatic vessels at the level of each structure of the eyeball. These include- the detection of immunomarkers: podoplanin, LYVE-1, PROX-1, VEGFR-3. These immunomarkers confirm the development of lymphatic vessels and lymphangiogenesis.

Aim of study. Studying the presence of lymphatic vessels at the level of specific structures of the eyeball: cornea, conjunctiva, uveal tract, retina, eye appendages.

Methods and materials. This is an analytical study based on scientific articles published on PubMed, MedlinePlus, ScienceDirect, NCBI, with information published in the last 5 years.

Results: Under normal conditions, the cornea is an avascular structure. Corneal lymphatic vessels can be induced only by inflammatory, infectious, traumatic, chemical or toxic processes. Likewise, lymphagiogenesis was induced in laboratory conditions by causing chemical burns, applied sutures, implantation of inflammatory cells on the corneal surface. The de novo developed lymphatics were marked by detecting immunomarkers specific to lymphatic vessels at the corneal level: LYVE-1 and CD-31. The conjunctiva, under normal conditions, is endowed with both blood and lymphatic vessels. Immunohistochemical studies found immunomarkers in the stroma of the ciliary body: podoplanin and LYVE-1. Retina, as well as the eyelids, lacrimal glands, extraocular muscles, optic nerve sheath was confirmed to be provided with LYVE-1 and PROX-1 cells. However, the role of these cells in lymphangiogenseis remains to be confirmed.

Conclusion. Performant studies can confirm the presence of specific immunomarkers at the eye level, which represents an evolution compared to the histological criteria used in the past. To certainly prove that these markers are present it is necessary to perform multiple immunohistochemical tests, finding at least two of them. Their presence is also a criteria that proves the development of new lymphatic vessels (lymphangiogenesis) in pathological conditions.