2. IMAGING DIAGNOSIS OF MULTIPLE SCLEROSIS

Author: Trandafilova Valentina

Scientific advisor: Seu Victoria, Assistant Professor, Department of Radiology and Imaging, *Nicolae Testemitanu* State University of Medicine and Pharmacy, Chisinau, Republic of Moldova

Introduction. Multiple sclerosis (MS) is a chronic and disabling autoimmune disease of the nervous system that affects more than 2.9 million people worldwide. Early detection of MS is essential to initiate appropriate therapy and management strategies that can help slow disease progression and prevent disability. The main role in the diagnosis of MS is occupied by imaging methods.

Aim of study. To identify the imaging methods used in the diagnosis of MS and to underline the imaging particularities of the pathological changes characteristic of MS.

Methods and materials. A literature review was done, by searching the scientific articles on Google Scholar, PubMed, Cochrane, Elsevier, published in the last 5 years, using keywords "diagnosis of MS", "MRI changes in MS", "cerebral changes", "MRI criteria".

Results. MRI is the most common imaging method for diagnosing MS, providing high-quality images of the brain, optic nerve and spinal cord to identify lesions. Other radiological and imaging techniques used in the diagnosis are positron emission tomography, single photon emission computed tomography and optical coherence tomography, fluid attenuated inversion recovery, MR spectroscopy. Imaging methods can detect areas of demyelination in the brain and spinal cord, which are the main characteristics of MS, these areas appear as hyper-, hypointense spots on MRI, specific signs are "black holes","Dawson's fingers", as another manifestation cerebral atrophy may occur. Based on these imaging changes and clinical manifestations, the McDonald diagnostic criteria were created.

Conclusion. Imaging methods are widely used in the evaluation of patients with MS and provide important imaging data for clinical and differential diagnosis, staging and later aid in effective management.