44. SEROLOGY IN EPSTEIN-BARR VIRUS INFECTION IN CHILDREN

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Introduction: The Epstein-Barr virus was found in 1968 as the major cause of infectious mononucleosis. Since then the diagnosis of EBV has gone a way from the nonspecific tests, such as the heterophile antibody test, to specific EBV antibody tests performed through IFA, the "gold standard", different immunoassay techniques, additional tests, used for confirmation such as avidity test and Western blot, to PCR, mainly used in patient with immunosuppression. The seroprevalence in adult population is wide, ranging from 85% in developed counties to 95-100% in developing counties. By age 5 seroprevalence in the UK and USA is 50%. In RM the incidence of mononucleosis has increased from 0.97 in 1992, to 2.97 in 2007. Although laboratory diagnosis in mononucleosis is straightforward and available, it still imposes some questions, due to high variability of EBV serology.

The objective of this research is to study and discuss the challenges of laboratory diagnosis and staging of EBV infection based on serological profiles of the patients tested to EBV infection at the Hospital for Infectious Diseases in Children, in Chisinau, R. of Moldova during the year 2015.

Materials and methods: the materials used are blood serum or plasma samples from 311 patients from 5 months old to 17 years old from the Hospital for Infectious Diseases in Children, who were consulted or admitted with suspected mononucleosis or hepatitis of unknown origin. Blood was tested to EBV-CA IgM and IgG, EA IgG, EBNA-1 IgG, anti CMV IgM and IgG, anti HAV IgM. The testing system used is the enzyme immunoassay. The interpretation of the results given by reagent manufacturers is: 1) Primary infection VCA IgM positive, VCA IgG pos/neg, EA IgG pos/neg, EBNA IgG negative, 2)Past infection VCA IgM negative, VCA IgG and EBNA IgG positive, 3)Reactivation VCA IgM, VCA IgG, EBNA IgG positive.

Patients are categorized by their serology profile (VCA IgM and IgG, EBNA-1 IgG) in 3 main groups, patients with serology characteristic to acute infection, past infection, and patients with serology that can be interpreted either way.

Discussion results: 209 blood samples were found positive to at least 1 marker of EBV infection. 114 had VCA IgM negative, VCA IgG and EBNA IgG positive. 34 were VCA IgM and IgG positive and EBNA IgG negative. 12 were VCA IgG positive VCA IgM and EBNA IgG negative, 25 were VCA IgG and IgM positive, EBNA IgG positive, 19 were VCA IgM positive, VCA IgG and EBNA IgG negative, and 4 were only EA IgG or EBNA IgG positive.

Conclusion: 67.2% of samples were positive to EBV infection, which meant primary or past infection, 65.8% being children under age of 6 years. From them 54.5% had a serological pattern of past

infection, 25.3% had indicators of primary infection, the rest (19.6%) had serological patterns that might have benefit from additional tests, such as avidity tests, western blot or PCR.

Key words: infectious mononucleosis, children, laboratory diagnosis

45. THE ROLE OF BRAIN PLASTICITY IN THE PROCESSES OF RECOVERY OF MULTIPLE SCLEROSIS

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Introduction: Neuroplasticity refers to the potential that the brain has to reorganize by creating new neural pathways to adapt, as it needs. Think of the neurological changes being made in the brain as the brain's way of tuning itself to meet your needs. The more you focus and practice something the better you become at the new skill that you are learning or an obstacle you are trying to overcome. By doing this new neural connections are created in the brain as synapses that don't usually fire together do, which help us to sharpen our new skill.

Materials and methods: Motor symptoms are common and disabling across the phases and forms of multiple sclerosis. Disease modifying treatments help to prevent their development, but most of their management is through rehabilitation. Current rehabilitation approaches are based on physical therapy tailored to the individual's needs. The efficacy of these approaches, however, is limited, as it is purely based on clinical grounds, and is largely unpredictable in the individual case, where several factors, including location, extent, and severity of multiple sclerosis damage, can contribute to individual variation in rehabilitation outcomes. Therefore, an improved understanding of the neural processes underlying functional recovery and driven by rehabilitation, as well as the development of novel recovery interventions that fully exploit the individual patient's potential to recover motor function remain a clinical necessity and a research priority.

Discussion results: Rehabilitation of the damaged brain can foster reconnection of damaged neural circuits in multiple sclerosis. Learning mechanisms play an important part in this. We studied a triage of post-lesion states, depending on the loss of connectivity in particular circuits. A small loss of connectivity will tend to lead to autonomous recovery, whereas a major loss of connectivity will lead to permanent loss of function; for such individuals, a compensatory approach to recovery is required. Empirical data are implemented in a neural network model, and clinical recommendations for the practice of rehabilitation following brain damage are made.

Conclusion: Cortical reorganization has been demonstrated in the motor network that mediates performance of a motor task in patients with multiple sclerosis. Rehabilitation of motor function is a major component of management that is supported by neuroplasticity, the brain's ability to adapt to multiple sclerosis damage or disability. The need for novel rehabilitation approaches, underpinned by promoted and enhanced neuroplasticity, challenges traditional experimental designs. This challenge can be addressed using methodological advances, especially in neuroimaging, which allow improved understanding of mechanisms and detection of intervention effects.