230. RELATIONSHIP BETWEEN CLINICAL STAGES AND DISTRIBUTION OF NEUROFIBRILLARY TANGLES IN ALZHEIMER'S DISEASE

Author: **Nicolae Cairac**
Scientific adviser: Foca Ecaterina, MD, PhD, Associate professor, Departement of Morphopathology
Nicolae Testemitanu State University of Medicine and Pharmacy of the Republic of Moldova

Introduction. Clinical signs can suggest the diagnosis of Alzheimer's disease and can help in choosing the tactics of later diagnosis and treatment, usually it can be rendered with a degree of probability, because the definitive diagnosis is established by post-mortem cerebral biopsy.
Aim of the study. In this paper, we aim to analyze the literature and to make a synthesis of the clinical signs and distribution of neurofibrillary tangles which can provide data about the severity of the Alzheimer's disease. The main purpose is to identify the clinical signs in each microscopic stages of Alzheimer disease.
Materials and methods. Literature sources were accessed via Sciencedirect by a search on the terms "Stageing of Alzheimer" and "Neurofibrillary tangles".
Results. The literature study has identified 3 clinical stages and 6 microscopic stages, which were combined for practical reasons, these stages are: (transentorhinal 1 and 2), (limbic 3 and 4) (isocortical 5 and 6). Transentorhinal stage represents the preclinical phase of disease, Limbic stage the incipient phase, and Isocortical stage, the presence of dementia.
Conclusions. Each clinical stage of Alzheimer's disease has its microscopic equivalent, therefore, in establishing the presumptive diagnosis of Alzheimer's disease using the NINCDS-ADRDA criteria, the clinician may assume the degree of distribution of neurofibrillary tangles and affected areas, which will dictate the diagnostic, treatment and prognostic approach.
Key words: Alzheimer's disease, neurofibrillary tangles, microscopic stages, clinical stages

231. ROLE OF MATRIX METALLOPROTEINASES IN ANGIOGENESIS AND PROGRESSION OF ATHEROSCLEROTIC PLAQUE

Author: **Ana-Iulia Pîrțu**
Scientific adviser: Elena Portnoi, MD, University assistant, Department of Morphopathology
Nicolae Testemitanu State University of Medicine and Pharmacy of the Republic of Moldova

Introduction. Atherosclerosis is a chronic disease characterized by multifocal structural alterations of the vascular wall of medium and large arteries, leading to the accumulation of cholesterol and continuous inflammation. Inflammatory angiogenesis in atherosclerotic lesions plays a major role in plaque progression and instability.
Aim of the study. The review examines the role of the MMPs in plaque angiogenesis, destabilization, and its relation to inflammation.
Materials and methods. Informational support for the development of this review is based on current international journals, including more than 50 references in English and Russian languages.
Results. It is firmly established that extracellular proteolysis mediated by MMPs is an absolute requirement for angiogenesis. MMPs released by inflammatory cells, are implicated in the sprouting phase, including basement membrane degradation and cell migration/ECM invasion. The neovascularization prevents cellular death due to better supply of O2 and nutrients. But simultaneously allows lipid core expansion, leukocyte afflux, plaque growth and destabilization due to the compromised structural integrity of imature vessels (discontinuous basement membrane, low number of tight junctions between the ECs, lack in pericyte coverage)highly susceptible to intraplaque hemorrhage. In atherosclerotic plaques, MMPs not only induce the

sprouting of neovessels but also can provoke net destruction of collagen in the shoulder regions of fibro-atheromas and thus contribute to the weakening of the fibrous cap and precipitate transition to an unstable lesion, plaque rupture, leading to myocardial infarctions or strokes. Furthermore, specific MMPs have been shown to enhance angiogenesis by releasing ECM-bound angiogenic growth factors.
Conclusions. By providing pathological angiogenesis MMPs may induce plaque growth, maintenance or destabilizing of the atherosclerotic plaque.
Key words: atherosclerosis, angiogenesis, matrix metalloproteinases

232. STUDY OF THE EPITHELIO-MESENCHYMAL TRANSITION PROCESS IN THE PATHOGENESIS OF GASTROINTESTINAL TRACT ENDOMETRIOSIS

Author: **Eugeniu Cazacu**
Scientific adviser: Eremei Zota MD, PhD, Professor; *Nicolae Testemitanu* State University of Medicine and Pharmacy of the Republic of Moldova
Claudiu Margaritescu, Department of Morphopathology, Department of Pathology, University of Medicine and Pharmacy, Craiova, Romania

Introduction. Epithelial – mesenchymal transition (EMT) endows cells with migratory and invasive proprieties, a prerequisite for the establishment of endometriotic lesions. The role EMT might play in the pathophysiology of endometriosis is still unknow. Therefore, we examined four markers for EMT in endometrium and endometriosis: E – cadherin + Vimentin, double reactions and simple reactions Twist and N – cadherin.
Aim of the study. The role EMT in the pathophysiology of endometriosis.
Materials and methods. During a period of five years (2012 – 2017) we analyzed 7 cases of gastrointestinal tract endometriosis: appendix (1case), colon (5 cases), ileum (1case). The material was processed according to the classic histological technique by inclusion in paraffin. The 3 μm sections obtained were stained with Hematoxylin – Eosin and Masson's trichrome stains. Another sections were dewaxed, rehydrated and processed for immunohistochemistry using as primary antibodies monoclonal antibodies Vimentin and mouse monoclonal antibody N – cadtherin, E – cadherin, Twist.
Results. Immunohistochemically, we aimed to change the immunophenotype from epithelial to mesenchyme in gastrointestinal endometriosis by analyzing the most important markers of the transition process. In endometriosis and endometrium E – cadherin, Vimentin, N – cadherin and Twist were expressed on protein level. Investigation of E – cadherin / Vimentin coexpression revealed a decrease in E – cadherin reactivity at the site of invasion of gastrointestinal endometriosis with an increase in reactivity to Vimentin together with the increase of the invasion pattern and the increase of the stage of the disease respectively. Twist transcription factor immunoexpression revealed a highly positive expression on the mesenchymal lineage, proving involvement of this transcriptional factor in the invasion process of gastrointestinal endometriosis. N – cadherin was positive in the endometrial glands, showing their differentiation into a mesenchymal phenotype and their migratory potential.
Conclusion: The results of our study confirm involvement of the epithelial – mesenchymal transition process in the pathogenesis.
Key words: endometriosis, gastrointestinal tract, mesenchymal transition

DEPARTMENT OF PHARMACOLOGY AND CLINICAL PHARMACOLOGY

233. THE DEVELOPMENT OF ANTIBIOTIC RESISTANT BACTERIA IN HOSPITALS