A combined activity of both drugs prevents the development of PPF in patients with a small area of the lung tissue (up to 10-15%) and significantly reduces the intensity of radiological manifestations of PPF in patients with moderate pneumonia (20-40%).It should be noted that the early indication of a combination of serratiopeptidase-budesonide can also significantly stimulate the effectiveness of antibacterial therapy in patients with viral-bacterial pneumonia, increasing the concentration of antibiotic in the lung tissue, promoting liquefaction of bronchial secretions, stimulating mucociliary clearance and reducing inflammatory swelling of the damaged tissues.

Mykytyyk O.P.

RECENT ACHIEVEMENTS AND TREATMENT STRATEGY IN OSTEOARTHRITIS (LITERATURE REVIEW)

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Osteoarthritis (OA) is the most common form of arthritis that widely afflicts population of elder age and causes disability frequently. Moreover, other less spread muscular-skeletal disorders, for instance, rheumatoid arthritis are far ahead in terms of drug development.

Main OA treatment strategies include pain relief and chondroprotection. As well as ten years ago, drugs for OA are divided into those improving pain and those which improve cartilage structure. Existing guidelines for the management of OA include the abovementioned pharmacological therapies in addition to education, weight loss, and exercising. Single new anaestetics appeared on the market for last decade, and oral and topical non-steroidal anti-inflammatory drugs and cyclooxygenase-II inhibitors, acetaminophen (paracetamol) are still prioritized. Opiates, intraarticular steroids are indicated when first-line agents fail. However, half of patients taking the drug report no relief even in case of administration of the best of these agents while the side effects and potential toxicities limit their use in a population who often has associated comorbidities.

Aim: toanalyze recent literature and distinguish progress in understanding nature and perspectives of OA treatment. The fact that OA is pleiotropic polyvariant disease with different molecular profiles and phenotype is one of recent significant discoveries. The following primary variants of OA are suggested to distinguish: chronic pain; inflammatory phenotype; metabolic syndrome phenotype; altered bone and cartilage metabolism phenotype; mechanical overloading phenotype and minimal joint disease phenotype. On the basis of etiology and provoking factor, OA may be different in secondary variants (crystal-driven, post-traumatic, autoimmune, occupation-associated), intra-and extraarticular types and one due to age-related association. These studies make us to conclude that classical inflammation does not uniquely drive OA. Hence, multiple molecular cascades may contain a key for successful treatment strategy.

Although osteoarthritis phenotype has been inconsistently reported in IL-6 knockout mice, therapeutic studies suggest that neutralization of IL-6 modifies OA in mice. A clinical trial using tocilizumab in hand osteoarthritis was completed in 2019 but has not yet been reported.

Targeting the proteases (disintegrin and metalloproteinase with thrombospondin motif (Adamts)-5) that degrade the cartilage extracellular matrix has long been regarded as an attractive approach to disease modification in osteoarthritis. A good safety profile and initial efficacy were demonstrated for a their small molecule inhibitor in phase 2 studies in knee OA. Other early phase trials investigate potential efficacy of Transforming growth factor α and epiregulin; Wnt pathway; CNS reuptake inhibitor; folate antagonist etc. Preclinical studies have shown that pharmacological inhibition of iNOS reduces OA progression and pain in a rodent model of OA as well. Bone Modulators – bisphosphonates seem to be perspective in number of OA cases. Their administration has been suggested to slow the bone remodeling process and could lead to chondroprotection. Strontium Ranelate is another antiosteoporotic drug capable of changing the balance between bone resorption and bone formation. It significantly attenuated cartilage matrix and chondrocyte loss, and decreased chondrocyte apoptosis in rats.

NGF (nerve growth factor) inhibitors (fasinumab, tanezumab and fulranumab) have been tried in OA and have shown promising results in terms of pain relief and improved functional capacity. Nevertheless, their further investigation seemed controversial, so they are regarded as treatment option in exclusive OA cases by FDA. Nanotubes, magnetic nanoparticles, and other nanotechnology-based drug and gene delivery systems may be used for targeting molecular pathways and pathogenic mechanisms involved in OA development. Nanotechnology platforms may be combined with cell, gene, and biological therapies for the development of a new generation of future OA therapeutics.

Nesterovska O.A.

COMPARATIVE CLINICAL AND FUNCTIONAL PROFILE OF PATIENTS WITH COMORBID ASTHMA AND CHRONIC OBSTRUCTIVE PULMONARY DISEASE

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The aim is to compare clinical and functional characteristics of patients with coexistence of asthma and chronic obstructive pulmonary disease.

The study population consisted of 30 patients defined as asthma-COPD overlap (ACO). Spirometry, 6-minute walk distance (6MWD), asthma-control test (ACT) and COPD Assessment Test (CAT) were evaluated. Measurements of blood eosinophils, total IgE levels and high-sensitivity C-reactive protein (hs-CRP) were done.

Among patients who fulfilled the ACO diagnostic criteria, there were 23 individuals (Group I) with persistent airflow limitation, reported asthma documentation before 40 years of age, 17 of them were current or former smokers and 11 patients were reported to be exposed to air pollution. 18 patients (78,3%) were in amoderate and severe persistent group and 5 patients (21,7%) were in the uncontrolled group according to ACT questionnaire.

Other 17 individuals (Group II) –patients with previous diagnosis of COPD, who developed respiratory symptoms (dyspnea, cough, sputum production and wheezing) above the age of 40 years, were found to have new adult-onset asthma.All of them were current or former smokers. Among these patients there were 4 with high degree of reversibilityof airflow limitation and 15 - with blood eosinophil count higher than 2% and 200 cell/ml. 14 patients were reported to have frequent (2-4 times per year) exacerbations due to respiratory infection.

Peripheral blood eosinophils and serum IgE levels were 1,5 and 2,7 times higher ($p<0,05$) among Group II subjects. FEV1 was higher in Group I by 3,9% than in Group II. The COPD Assessment Test score was higher in Group II ascomparedwith Group I, but no correlation between CAT and FEV1 was found. There was no difference in hs-CRP level between groups and hs-CRP did not correlate with spirometry.

ACO is a heterogeneous disorder, which include patients with confirmed asthma, who are current or former smokers and then develop COPD features (chronic productive cough, exertion dyspnea and persistent FEV1/FVC <0,7) and patientswith COPD,who developed adult-onset asthma,eosinophilic inflammation, atopic disposition and/or high degree of reversibilityof airflow limitation. Further research is needed to understand different patterns of lung inflammation and search for new possible diagnostic and therapeutic measures in patients with comorbidasthma and COPD.

Prysyazhnyuk V.P.

ECHOCARDIOGRAPHIC FEATURES IN NON-ALCOHOLIC FATTY LIVER DISEASE PATIENTS WITH DIFFERENT POLYMORPHIC VARIANTS OF DELETION POLYMORPHISM OF THE GLUTATHIONE-S-TRANSFERASE M1 GENE

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Epidemiological studies indicate a higher incidence of adverse cardiovascular events in patients with non-alcoholic fatty liver disease (NAFLD) as compared to the general population.