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PS05.01 (760)**Etiology of community-acquired and hospital-acquired pneumonia associated with COVID-19**

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Purpose: The COVID-19 pandemic is accompanied by a high incidence of community-acquired pneumonia (CAP). Patients with a new coronavirus infection have an increased risk of developing hospital-acquired pneumonia. Aim: to study the etiological structure of CAP during the epidemic spread of COVID-19, to assess the risks of joining the pathogens of pneumonia associated with the provision of medical care.

Methods & Materials: Biological material from 1085 hospitalized patients with CAP was conducted from August 2020 - June 2021 in Rostov-on-Don (Russia). Verification of respiratory viruses including SARS-CoV-2 RNA was performed by polymerase chain reaction in nasopharyngeal smears. Bacteriological analysis of sputum was performed via classical methods, identification of isolated pathogens was carried out using time-of-flight mass spectrometry on an Autoflex (Bruker Daltonics) with BioTyper 3.0 software.

Results: Cases of type 3 parainfluenza virus (7.8±0.9%), other types of coronaviruses (HKU-1, OC43, HL-63 and 229E) (2.7±0.5%), respiratory syncytial virus (1.9±0.5%) were detected in patients with COVID-19. Fungi of the genus *Candida* (35.6±1.8%) and *Staphylococcus aureus* (9.1±1.1%) were prevailing in the microbiota structure. Should be noted that the number of *Streptococcus pneumoniae* cultures decreased from 5.5 % in August 2020 to 1.1 % in June 2021, possibly due to pneumococcal vaccination. Gram-negative enterobacteria were presented predominantly by *Klebsiella pneumoniae* (3.5±0.7%), *Escherichia coli* (2.9±0.6%), and non-fermenting Gram-negative bacteria – *Pseudomonas aeruginosa* (1.5±0.5%) and *Acinetobacter baumannii* (1.2±0.4%). In 30.6% of patients treated in the hospital there was a secondary infection probably associated with compromised immune system and the transmission of infection from the hospital environment. Secondary infection with *Candida* spp., non-fermenting Gram-negative bacteria (*A. baumannii*, and *P. aeruginosa*) and *K. pneumoniae*, including those characterized by multiple drug-resistance, prevailed. The most frequently registered resistance to penicillins, cephalosporins of 3rd generation.

Conclusion: A feature of CAP in patients with laboratory-confirmed COVID-19 is a higher incidence of mixed infection of both viral and bacterial etiology. Patients with COVID-19 represent a high risk group for the development of mycotic lung lesions, possibly against the background of treatment with antibacterial drugs. There is a significant risk of the formation of nosocomial infections in patients.

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PS05.02 (155)**Factors influencing on hospitalization of COVID-19 patients with comorbidity**

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Purpose: During COVID-19 pandemic, the total number of patients is periodically growing, including the number of those requiring hospitalization.

The factors that increase the risk of hospitalization with COVID-19 remain poorly understood.

Aim: identification of factors influencing on the likelihood of hospitalization in COVID-19 patients with comorbidity.

Methods & Materials: A retrospective cohort study of 74314 COVID-19 patients with a comorbidity within March–November 2020 in Russia. Using multivariate logistic regression, significant factors influencing hospitalization were identified.

Results: As a result, a logistic function was obtained that included 16 factors out of 21, which was statistically significant. In accordance with R² Nigekirk coefficient of determination, composition of the factors are 46.6%. Based on the regression coefficient values, the age of the patients, the sex of the patients, the severity of the disease, cardiovascular diseases, respiratory diseases, endocrine pathology, oncology and other diseases, fever, dyspnea and late address for medical care (after 5 day of disease) are factors that increase the likelihood of hospitalization. Rhinitis, loss of taste, belonging to contact with contact with COVID-19 patient, early seeking for medical care had an inverse relationship with the risk of hospitalization.

The chances of hospitalization of patients with oncology is increased 1.496 times (95% CI:1.159–1.932), with endocrine diseases - by 1.573 times (95% CI:1.238 -1.999), in patients with cardiovascular pathology - by 1.502 times (95% CI:1.185–1.903), in patients with bronchopulmonary pathology - by 1.439 times (95% CI:1.133–1.828), with other comorbidities - by 1.501 times (95% CI:1.184–1.904), in patients with moderate the course of the disease - by 8.353 times in comparison with patients with a mild course (95% CI:8,000–8.721), in patients with a severe course of the disease risk is increased by 68.291 times (95% CI:59.279–78.673), risk of hospitalization in men compared with women is increased 1.393 times (95% CI: 1.348–1.438), in patients with fever - 1.14 times (95% CI: 1.09–1.20), with dispnoea - 1.526 (95% CI: 1.495– 1.596).

The chances of hospitalization with an increase in age by 1 year increased 1.012 times (95% CI: 1.010–1.013).

Conclusion: These factors will help healthcare workers with the decisions regarding hospitalization of patients.

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PS05.03 (867)**Development of Duplex and Multiplex Reverse Transcription Loop Mediated Isothermal Amplification (RT-LAMP) Assays for Clinical Diagnosis of SARS-COV-2 in Sri Lanka**

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