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Title: Influence of long antibiotic therapy of lower respiratory tract infection (LRTI) on cytological characteristics of sputum

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Body: To estimate changes of surface epithelium, leukogram, presence of microbes in the induced sputum (IS) at patients (Pt) with LRTI due to antibiotic therapy (AT) the microscopic examination of IS from 32 Ps (mean age - 58,1±19,4, male 30 (93,8%)) before and after prescription AT was performed. LRTI included community-acquired pneumonia (CAP) at 24 (75%) Pt, COPD exacerbation at 8 (25%) Pt. Before AT in IS of 20 (83,3%) CAP Pt signs of bacterial infection were revealed: single cells of epithelium with degeneration, siderophages (10±3-5 in vision feilds), prevalence of neutrophils (94,5±3%), rich and moderate cocco-bacillary flora. In IS of 4 (16,7%) CAP Pt proliferation of alveolocyttes, dystrophy of prismatic epithelium, in leukogram - lymphocytes (37,5±5%) and monocytes (43±7,5%), scanty flora was found that reflected viral etiology. In IS of all COPD Pt against of the background of purulent detritus bronchial epitheliocytes with signs of squamous metaplasia and atypia, neutrophils (60±10%), lymphocytes (17±5,5%), monocytes (7±3%), moderate or abundant flora with coccobacills, diplococcus, leptotrix was revealed. Duration of AT was 8,5±2,3 days for 24 Pt and 15,4±3,4 days for 8 Pt (p<0.05). After AT in IS of Pt with prolonged therapy squamous metaplasia of surface epithelium with signs of hyperkeratosis and degeneration, increased lymphocytes (8±2,5%), eosinophils (13±4%), high level of Candida elements was found. In IS of Pt with short course of AT against of the background of mucus few leukocytes, macrophage and epitheliocytes were found. Long AT of Pt with LRTI caused dysfunction of normal regeneration process of surface epithelium.