CLINICAL AND MICROBIOLOGICAL ASPECTS OF PROTRACTED BACTERIAL BRONCHITIS IN CHILDREN

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Background. *Respiratory diseases occupy a leading position among childhood illnesses, and bacterial bronchitis is one of the most common respiratory conditions. In children with bacterial bronchitis, a wet cough may persist for 3–4 weeks and may lead to impaired mucociliary clearance. According to published studies addressing this problem, protracted bacterial bronchitis among children with chronic cough was identified in 40% of 100 children examined in Australia, 23.4% of 108 children in Türkiye, 56% of 197 children in the United States, and 76% of 66 children in China. Identification of the bacterial pathogen and selection of antibacterial therapy based on microbiological findings are important for improving treatment effectiveness.*

Aim. To investigate the clinical and microbiological characteristics of protracted bacterial bronchitis in children and to evaluate opportunities for optimizing antibacterial therapy.

Materials and Methods. The study was conducted during 2025–2026 at the outpatient consultation clinic of the Andijan Regional Children's Multidisciplinary Medical Center and included 20 children aged 5–12 years. The main group consisted of 20 patients diagnosed with protracted bacterial bronchitis. The control group included 10 apparently healthy children. All examined children underwent general clinical assessment and nasopharyngeal swab sampling to investigate the composition of the sputum microflora.

Results. Analysis of clinical symptoms showed that cough persisting for more than 21 days was recorded in all 20 patients (100%). Wet cough was observed in 18 patients (90.0%); signs of intoxication, including headache and general weakness, in 12 (60.0%); paroxysmal cough in 11 (55.0%); and elevated body temperature in 10 (50.0%). Among other clinical manifestations characteristic of protracted bacterial bronchitis, sputum production was noted in 13 patients (65%), while moist crackles on auscultation and worsening of cough during physical activity were observed in all patients. The predominance of persistent wet cough among the clinical manifestations indicated that it was the principal clinical phenotype of the disease. Streptococcus spp.,

including S. pneumoniae, were detected in 94.4% of cases, whereas Staphylococcus aureus was identified in 83.3%; a microbial association of S. aureus and Streptococcus spp. was recorded in 77.8% of patients. Antibiotic susceptibility testing demonstrated high susceptibility of the isolated microorganisms to ceftriaxone, ceftriaxone/sulbactam, cefoperazone/sulbactam, levofloxacin, and doxycycline. Reduced susceptibility or resistance to amoxicillin, ampicillin, and cefazolin was observed in some isolates. These findings indicate the predominance of microbial associations in the respiratory microbiota and support individualized selection of antibacterial therapy based on antimicrobial susceptibility testing.

Conclusion. Persistent wet cough and prolonged auscultatory abnormalities represent important clinical and diagnostic features of protracted bacterial bronchitis. Microbiological examination demonstrated the predominance of Streptococcus spp. and S. aureus, particularly as microbial associations, suggesting their important role in the protracted course of the disease. The heterogeneous antimicrobial susceptibility profiles support a shift from empirical antibacterial therapy toward individualized treatment strategies guided by microbiological monitoring. Selection of individualized antibacterial therapy based on sputum microbiological examination and antimicrobial susceptibility testing may improve treatment effectiveness, help prevent the development of antimicrobial resistance, and reduce the risk of progression to a chronic form of the disease.

Keywords: protracted bacterial bronchitis, microbial associations, S. aureus, S. pneumoniae, wet cough.