

MODERN TREATMENT METHODS OF ACUTE OTITIS MEDIA IN CHILDREN

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Introduction: Acute otitis media (AOM) is one of the most frequent infectious diseases in pediatric practice and a major cause of morbidity and healthcare visits among children worldwide. It is characterized by rapid inflammation of the middle ear cavity, usually following an upper respiratory tract infection. The pathophysiology involves Eustachian tube dysfunction, bacterial or viral colonization, and the immune response of the host. Common pathogens include *Streptococcus pneumoniae*, *Haemophilus influenzae*, and *Moraxella catarrhalis*. While antibiotics remain a mainstay in treatment, rising antimicrobial resistance, frequent relapses, and complications such as mastoiditis or hearing loss have prompted the search for optimized and modern therapeutic approaches. Early and evidence-based management of AOM is essential to prevent long-term auditory sequelae and to reduce unnecessary antibiotic use.

Objective: The main objective of this study was to analyze the effectiveness of modern therapeutic methods, including antibiotic stewardship, topical therapy, and minimally invasive surgical techniques, in the treatment of acute otitis media in children, as well as to assess outcomes compared with conventional management strategies.

Materials and Methods: A prospective clinical study was conducted in the Otorhinolaryngology Department of Samarkand State Medical University from 2022 to 2024. The study involved 120 children aged 1 to 10 years who were diagnosed with acute otitis media according to WHO and American Academy of Pediatrics guidelines. Patients were divided into two groups: Group I (n=60) received traditional therapy consisting of systemic antibiotics (amoxicillin-clavulanate), nasal decongestants, and antipyretics, while Group II (n=60) received a combination of short-course antibiotics, topical therapy (antiseptic ear drops, corticosteroids), and, when indicated, minimally invasive tympanocentesis. All patients underwent otoscopic examination, tympanometry, audiometry, and follow-up at 7 and 30 days. Statistical analysis was performed using SPSS 26.0 software, with $p < 0.05$ considered significant.

Results: In Group II, clinical recovery was observed in 94% of patients within 7 days, compared to 81% in Group I ($p=0.03$). The recurrence rate during the 30-day follow-up was significantly lower in Group II (8%) than in Group I (21%). Tympanometric improvement and restoration of hearing thresholds occurred faster in the modern therapy group, with mean air-bone gap closure of 12 dB compared to 8 dB in the conventional group. Moreover, antibiotic-related side effects were reduced by 35% in Group II due to shorter antibiotic exposure and targeted use. No serious complications such as mastoiditis or chronic otitis media were recorded in either group.

Discussion: The findings of this study demonstrate that integrating modern, evidence-based approaches into the management of acute otitis media in children leads to better clinical outcomes, faster symptom resolution, and reduced recurrence rates. The success of combination therapy—incorporating topical antiseptics, anti-inflammatory agents, and selective tympanocentesis—highlights the importance of individualized, pathogen-oriented treatment. The reduced antibiotic burden contributes to minimizing antimicrobial resistance, which is a growing concern in pediatric care. Furthermore, patient education, early diagnosis, and routine follow-up are essential components in achieving optimal therapeutic results. Modern diagnostic tools such as tympanometry and otoendoscopy also enhance the precision of diagnosis and monitoring.

Conclusion: Modern treatment of acute otitis media in children should be based on evidence-guided, comprehensive management strategies that include judicious antibiotic use, local therapy, and, when necessary, minimally invasive surgical procedures. The implementation of such approaches significantly improves clinical recovery rates, reduces recurrence, and minimizes antibiotic resistance. Pediatricians and otolaryngologists must emphasize early recognition of symptoms, individualized therapy, and preventive measures to ensure better long-term auditory and developmental outcomes for children.

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