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PRINT: ISSN 0972-3757 ONLINE: ISSN 2456-6330

Int J Hum Genet, 26(2): 88-99 (2026)
DOI: 10.31901/24566330.2026/26.02.931

Investigation of Current Status of Antibiotic Use and Optimisation Strategies for Elderly Diabetic Patients with Pulmonary Infections in Emergency Settings

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KEYWORDS Adverse Drug Reactions. Drug Resistance. Elderly Patients. Individualised Treatment. Multidisciplinary Care. Pathogen Distribution

ABSTRACT The study analysed antibiotic use and pathogenic bacteria distribution in individuals with Type 2 Diabetes Mellitus (T2DM) intricated by pulmonary infection. A retrospective review of 134 patients admitted in January 2022 to December 2023 was conducted, focusing on the types, duration, and combinations of antibiotics, pathogen distribution, and adverse reactions. Antibiotic timing and selection, guided by pathogen type and sensitivity, significantly affected outcomes, while penicillin, cephalosporins, and quinolones showed increasing resistance. Statistical analysis involves applying Chi-square tests using SPSS 29, and alongside qualitative thematic analysis. Optimal therapy requires careful drug selection, timely initiation, and treatment adjustment. Chi-square analysis revealed treatment outcomes were significantly associated with glycemic control ($\chi^2=5.62$, $p=0.018$) and early symptom improvement ($\chi^2=6.93$, $p=0.008$). Multidisciplinary approaches enable comprehensive and individualised, effective treatment, vital for elderly diabetic patients with acute pulmonary infections. Overall, sensitivity-guided, individualised antibiotic management improves outcomes and reduces adverse drug reactions among elderly patients with diabetes and pulmonary infections.