

1 **Bacteriological and Clinical profile of Community Acquired Pneumonia in hospitalized**
2 **patients at a tertiary care centre in Telangana.**

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4 **Background:** Community-acquired pneumonia (CAP) is a major global health concern due
5 to its high rates of illness and death [1]. Infectious Diseases Society of America (IDSA)
6 defines CAP as “an acute pulmonary parenchymal infection with the presence of an acute
7 infiltrate on the chest X-ray or auscultatory findings such as altered breath sounds or
8 localised rales consistent with pneumonia among patients who have not been previously
9 hospitalised for ≥ 14 days before the onset of symptoms” [6]. This study was aimed to
10 determine the bacterial and clinical profile of pathogens in community-acquired pneumonia
11 and to study their antibiotic susceptibility pattern in patients admitted to AIMS General
12 Hospital, Hyderabad.

13

14 **Materials and Methods:**

15 A cross-sectional study was conducted from March to May 2025 in the Central Laboratory,
16 Department of Microbiology, AIMS General Hospital, Hyderabad. 189 respiratory samples
17 (sputum, bronchoalveolar lavage [BAL], and endotracheal secretions) from patients with
18 clinically suspected CAP were processed by Gram staining and culture on blood, chocolate
19 and McConkey agar. The culture isolates were further identified as per standard protocol.
20 Antibiotic susceptibility test was done using the Kirby-Bauer disc diffusion method per CLSI
21 2025 guidelines.

22

23 **Results:**

24 Out of 189 processed samples, 76 (40.2%) were culture-positive for CAP. Males were more
25 affected than females (M:F ratio = 2.3:1), with the highest incidence in the 56–65-year age

26 group. *Klebsiella pneumoniae* (43.42%) was the most common isolate, followed by
27 *Staphylococcus aureus* (25%), *Pseudomonas aeruginosa* (23.68%), and *Streptococcus*
28 *pneumoniae* (7.89%). Gram-negative bacteria predominated (67.1%). Meropenem showed
29 100% sensitivity against both *Klebsiella pneumoniae* and *Pseudomonas aeruginosa*. Among
30 gram-positive isolates, Cotrimoxazole and Doxycycline demonstrated the highest efficacy
31 (89.47% against *Staphylococcus aureus*). Sputum, BAL and Endotracheal secretion samples
32 showed positivity rates of 47.5%,30.9% and 14.28% respectively.

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34 **Conclusion:**

35 Community-acquired pneumonia (CAP) more commonly affects the elderly than young
36 adults and shows male predominance. Diabetes Mellitus and Hypertension remain the most
37 common comorbidities in Community acquired pneumonia patients. Fever, Dyspnea and
38 Cough remain predominant symptoms in Community acquired pneumonia (CAP). This study
39 suggests that *Klebsiella pneumoniae* is an established pathogen in Community acquired
40 pneumonia (CAP).

41 Carbapenems and BL-BLI's can be used for empirical therapy for Community acquired
42 pneumonia (CAP) caused by Gram negative pathogens. The study underscores the
43 importance of ongoing surveillance of microbial trends and antibiotic resistance patterns to
44 guide effective treatment and combat rising antimicrobial resistance.

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46 **Keywords :** Community acquired pneumonia, Sputum, *Klebsiella pneumoniae*

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