

# Inpatient Trends and Economic Burden of Febrile Neutropenia in Solid Malignancies: Insights From a Low-Middle Income Country

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## INTRODUCTION

- Febrile neutropenia (FN) is a serious complication in cancer patients, especially those with solid tumors.
- Leads to high rates of illness, death, and use of healthcare resources.
- Hospital care for FN is costly, especially in LMICs where many patients pay out of pocket.
- Limited data on FN hospital trends and costs in LMICs.

## AIM

To assess inpatient trends and the economic burden of febrile neutropenia in solid cancer patients in a lower-middle-income country.

## METHOD

**Design:** Prospective observational study

**Setting:** Aga Khan University Hospital, Karachi, Pakistan

**Duration:** June 2023 – September 2024

**Participants:** 100 adult patients with solid tumors and FN

**Data Collected:** Demographics, Clinical characteristics, Inpatient hospitalization costs

**Risk Stratification:** MASCC risk score

**Key Outcomes;**

Length of hospital stay

Duration of antibiotics

Total hospitalization cost

## RESULTS

Baseline Characteristics of Patients	MASCC RISK SCORE		
	<21(High risk)	≥21(Low risk)	Total
	n=51	n=49	n=100
Mean, SD			
Age	58.1 (12.2)	49.9 (13.8)	54.0 (13.5)
Hb	9.1 (1.8)	9.7 (1.7)	9.4 (1.8)
WBC	0.8 (0.6)	1.1 (0.6)	0.9 (0.6)
Neutropenia	41.0 (26.6)	40.4 (25.1)	40.7 (25.9)
ANC	417.3 (410)	470.5 (380)	443.4 (396)
Platelets	106.2 (95.7)	136.4 (89)	121.3 (92)
Creatinine	1.2 (0.5)	0.9 (0.6)	1.0 (0.5)
Days of Filgrastim	3.3 (2.4)	2.6 (1.6)	3.0 (2.0)
Length of Stay	6.2 (4.7)	3.2 (1.5)	4.7 (3.7)
Antibiotic Days	8.1 (4.3)	5.7 (1.8)	6.9 (3.7)
Days to ANC Recovery	3.4 (2.4)	2.7 (2.0)	3.0 (2.3)
Frequency and %			
<b>Gender</b>			
Male	26 (50%)	24 (48.9%)	50 (50%)
Female	25 (49%)	25 (51.0%)	50 (50%)
<b>Stage</b>			
Stage I	3 (1%)	3 (2%)	6 (6%)
Stage II	11 (21%)	11 (22%)	22 (22%)
Stage III	7 (13%)	12 (24%)	19 (19%)
Stage IV	30 (58%)	23 (46%)	53 (53%)
<b>Neutropenia Grade</b>			
Grade I	6 (11%)	7 (6%)	13 (13%)
Grade II	9 (17%)	15 (30%)	24 (24%)
Grade III	20 (39%)	15 (30%)	35 (35%)
Grade IV	16 (31%)	12 (24%)	28 (28%)
<b>Care Level</b>			
General Care	19 (37%)	43 (87%)	62 (62%)
Special Care/HDU	32 (62%)	6 (12%)	38 (38%)

## CONCLUSIONS

- Stricter FN protocols are needed in LMIC to identify low-risk patients who can be treated as outpatients.
- Strong outpatient care systems can lower hospital costs, improve healthcare efficiency, and reduce financial strain
- The findings support the need for policy changes to include cost-effective FN treatment protocols in LMIC healthcare systems.

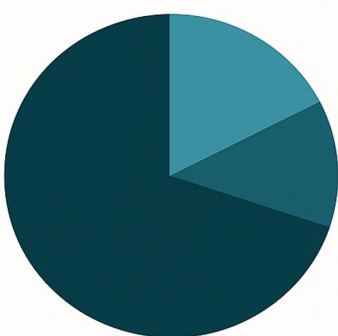


**Average Hospitalization Cost Per Day**  
\$350 USD/day



**Average Cost Per Admission**  
300,000 to 1 million  
PKR = \$1,050 to \$3,500

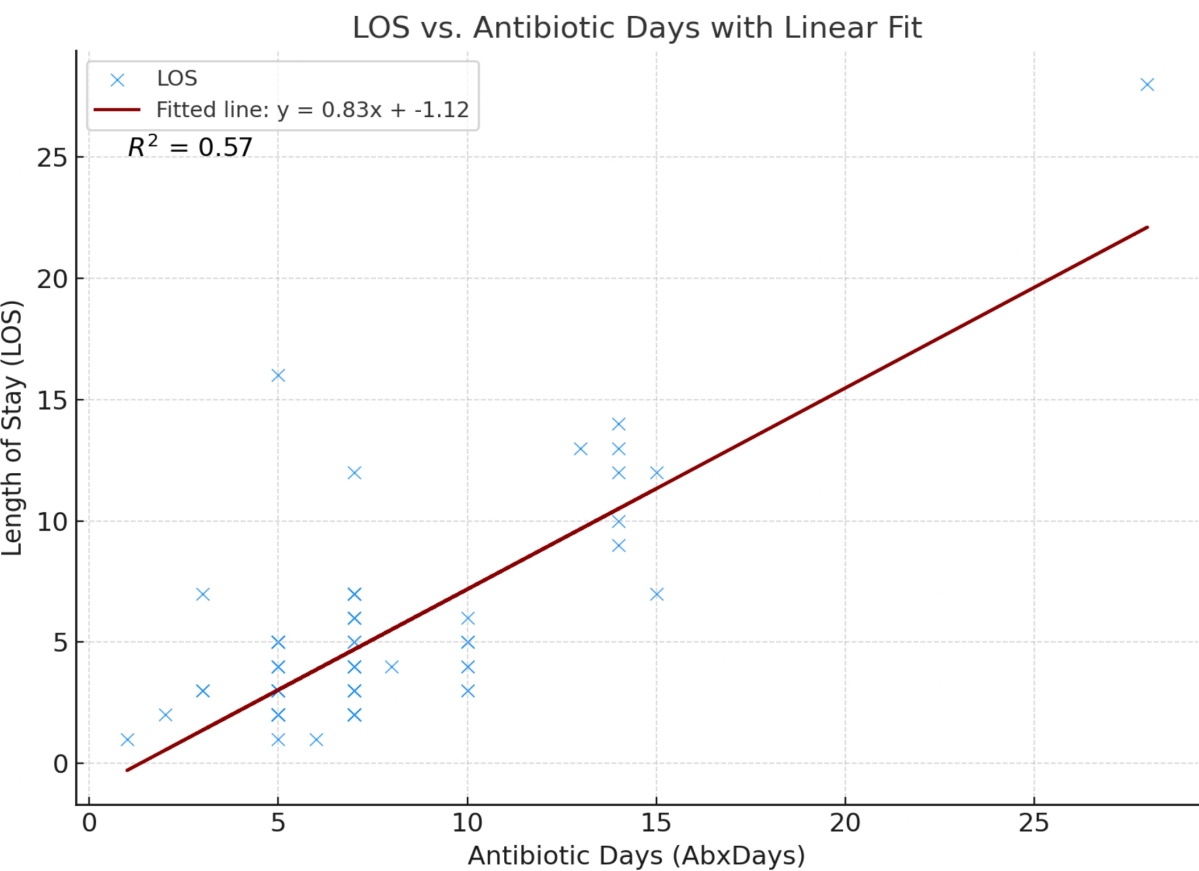
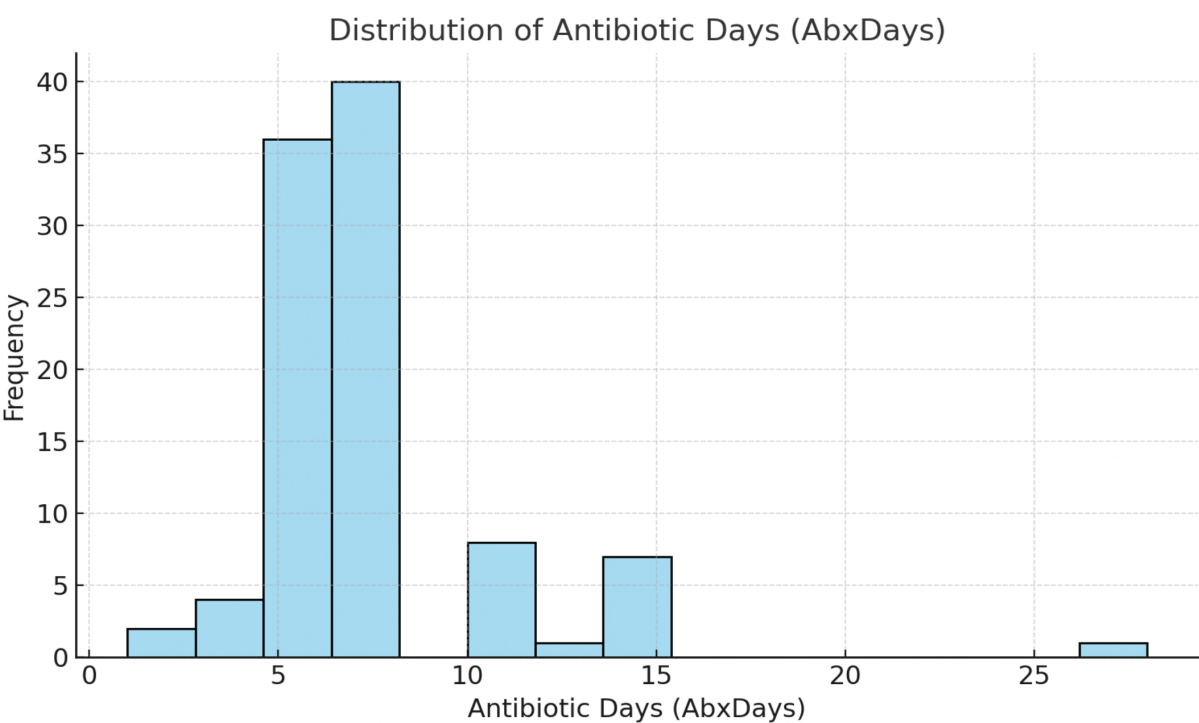
## Cost Breakdown



**20%**  
IV Antibiotics

**3%**  
Filgrastim

**Rest**  
(hospital charges)



## REFERENCES

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- Chindaprasirt J, Wanitpongpun C, Limpawattana P, et al. Mortality, length of stay, and cost associated with hospitalized adult cancer patients with febrile neutropenia. *Asian Pac J Cancer Prev*. 2013;14(2):1115-1119. doi:10.7314/APJCP.2013.14.2.1115

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