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Prevalence of Antimicrobial Resistance Pattern among Non-Fermenters In A Tertiary Care Hospital.

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I. INTRODUCTION

Non fermentative Gram negative bacteria are a heterogenous group of bacteria that includes Pseudomonas species, Acinetobacter species, Burkholderia species, Stenotrophomonas maltophiliaetc.NFGNB pose significant threat in health care settings because of their multiple ,intrinsic or acquired antibiotic resistance due to higher rate of empirical antimicrobial treatment than with the virulence of particular strains.This warrants close monitoring of their antimicrobial susceptibility profile to determine the MDR strains for infection control practices.Centre for disease control and prevention (CDC) defines antibiotic resistance as the ability of germs to defeat the drugs designed to kill them. Antibiotics are one of our most powerful tools for fighting life threatening bacterial infections. MDR (Multi drug resistance) is defined as acquired non-susceptibility to at least one agent in three or more antimicrobial categories

AIM
To study the prevalence of antimicrobial among non fermenters on tertiary care.
OBJECTIVE
To identify infections caused by Non fermenters in tertiary care hospital.

II. MATERIAL AND METHODS

A retrospective study was done in the microbiology laboratory for a period of 6 months(January 2022-July 2022).All the samples which were received during this period were processed according to standard guidelines for isolation and identification.Microbial identification of antimicrobial susceptibility data of Non fermenters were retrieved from VITEK 2 automated bacteriological identification system.

INCLUSION CRITERIA & EXCLUSION CRITERIA
Blood samples , Urine samples, Exudate samples , Respiratory samples.

EXCLUSION CRITERIA
Stool samples.

III. RESULTS

From the 1113 samples received, a total of 515(46%) Non fermenters gram negative bacilli were isolated. These include 273(53%) Pseudomonas aeruginosa, 174 (33%) Acinetobacter baumanii, 56(10%) Burkholderiacepacia , 15 (2%) Stenotrophomonas maltophilia. They were mostly isolated from Exudate (37%) followed by Respiratory (26%), Urine (26%), Blood (9%). Of the 273P.aeruginosa isolates the resistance were shown as Amikacin(21%), Gentamycin (31%), Imipenem (35%), Meropenem(27%), Doripenem(21%), Piperacillin/ Tazobactam(65%), Cefepime(38%), Ceftazidime(55%), Colistin(12%), Ciprofloxacin(34)Of the 56 Acinetobacter baumanii isolates the resistance were shown as Amikacin(4%), Gentamycin(57%),Imipenem(54%), Meropenem (54%), Doripenem(21%), Piperacillin/ Tazobactam(79%), Cefepime(60%), ceftazidime(30%), Colistin(4%), Ciprofloxacin(60%).

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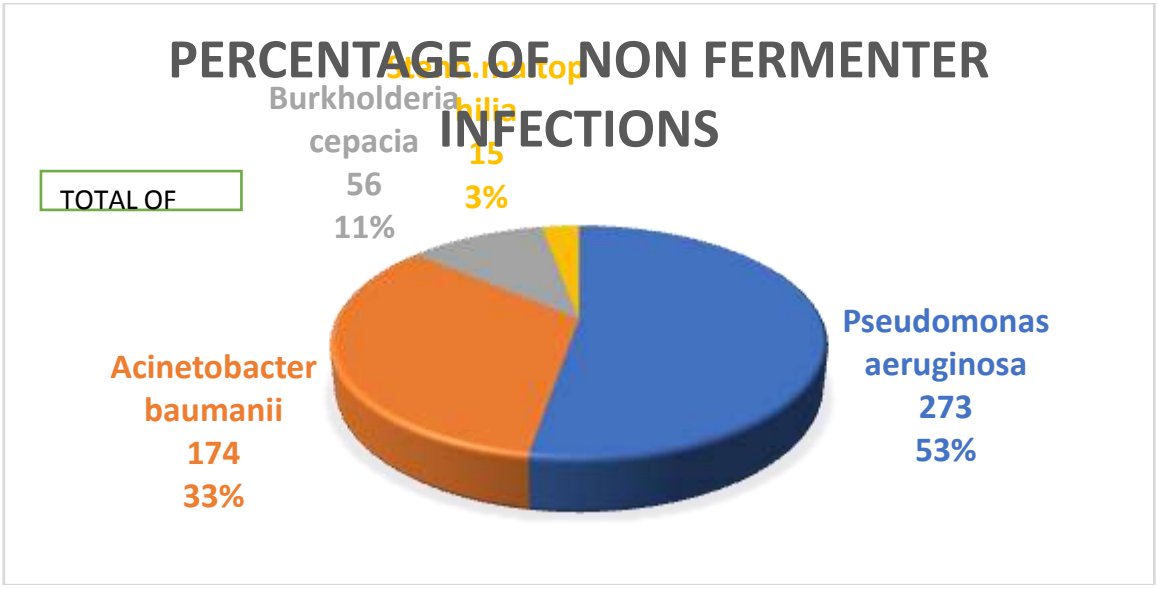

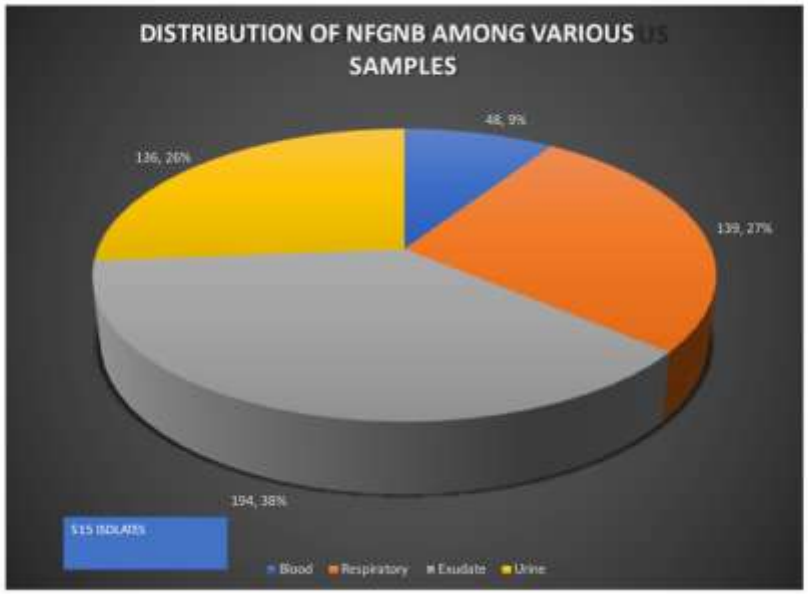

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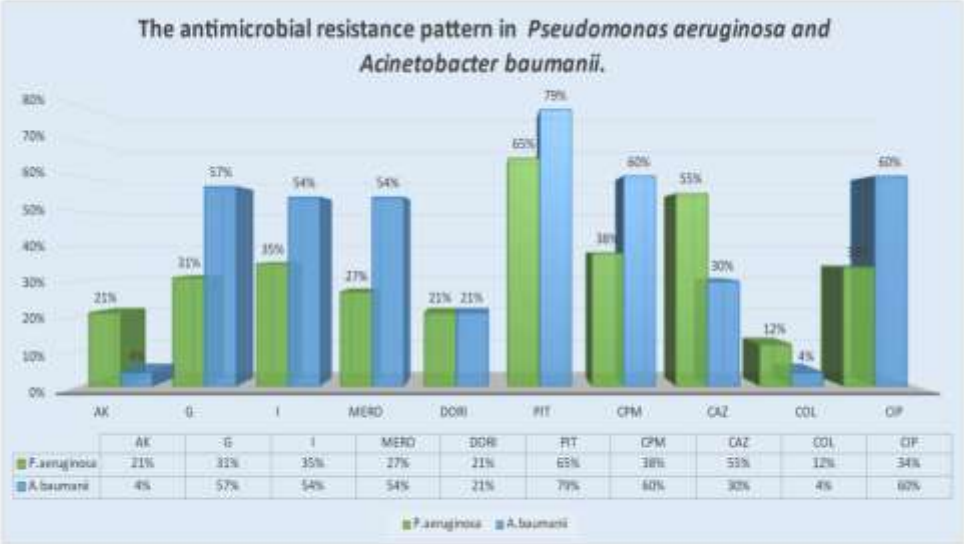
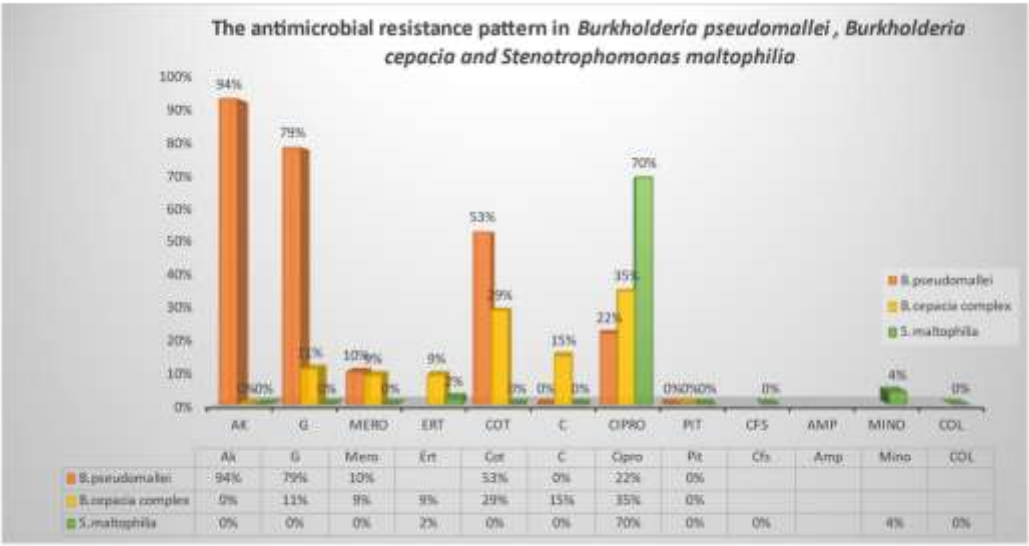


	AK	G	I	MERO	DORI	PIT	CPM	CAZ	COL	CIP
P.aeruginosa	21%	31%	35%	27%	21%	65%	38%	55%	12%	34%
A.baumanii	4%	57%	54%	54%	21%	79%	60%	30%	4%	60%



	Ak	G	Mero	Ert	Cot	C	Cipro	Pt	Cfs	Amp	Mino	COL
B.pseudomallei	94%	79%	10%		53%	0%	22%	0%				
B.cepacia complex	0%	11%	9%	9%	29%	15%	35%	0%				
S.maltophilia	0%	0%	0%	2%	0%	0%	70%	0%	0%		4%	0%

CONCLUSION

NFGNB are becoming a threat to healthcare systems because these bacterias are mainly associated with opportunistic and healthcare related infections in critically ill and immunocompromised patients.The emergence of MDR non fermenters poses a major pubic threat as it becomes more difficult to treat leading to increased antimicrobial resistance.The awareness regarding the emerging Multi drug resistance among the microbiologist and clinicians would help us in the judicial use of antibiotics in the treatment and reduce the emergence of drug resistance.

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