

**POST GRADUATE DEPARTMENT OF MICROBIOLOGY
GOVERNMENT MEDICAL COLLEGE SRINAGAR**

Antibiogram of Blood (July 2023 – Dec 2023)		
Total Samples	2917	100%
Culture positive	641	22%
Culture negative	2276	78%
Total Gram positives	295	46%
Total Gram negatives	255	39.8%
<i>Staphylococcus aureus</i>	102	34.6%
Coagulase negative <i>Staphylococci</i>	146	49.5%
<i>Enterococcus</i> species	47	15.9%
<i>Escherichia coli</i>	20	7.8%
<i>Klebsiella</i> species	16	6.3%
<i>Citrobacter</i> species	02	0.8%
<i>Salmonella</i> species	02	0.8%
<i>Proteus</i> species	1	0.4%
<i>Pseudomonas</i> species	83	32.5%
<i>Burkholderia</i> species	38	14.9%
<i>Acinetobacter</i> species	93	36.5%
<i>Candida</i> species	91	14.2%

Note: An unexpectedly high yield of positive blood cultures has been primarily contributed by isolation of high numbers of Coagulase negative *Staphylococcal* species, which are usually regarded as skin contaminants unless proved otherwise. This in-turn reflects poor skin disinfection practices at the venipuncture sites while drawing blood for cultures.

Antimicrobial sensitivity patterns for isolates less than 30 have not been mentioned as is recommended by CLSI.

Antimicrobial sensitivity pattern of *Candida* species has not been mentioned as the same is not done in the department because of non-availability of reagents.

Percentage Sensitivity of Gram-Positive organisms (Blood)

Organism (n=295)	Isolates %	Penicillin	Ampicillin	Clindamycin	Gentamicin	High level Gentamicin	Vancomycin	Ciprofloxacin	Linezolid	Teicoplanin
MRSA ¹	42%	-	-	65	53	-	-	14	100	100
MSSA ²	58%	-	-	85	73	-	-	24	100	100
MR-CONS ¹	63%	-	-	60	68	-	-	40	100	100
MS-CONS ²	37%	-	-	62	70	-	-	69	100	100
<i>Enterococcus</i>	100%	60	70	-	-	50	81	-	99	82

Note: For Staphylococcus, Vancomycin was not tested because the recommended method is MIC, however majority of Staphylococcal isolates are expected to be vancomycin susceptible.

1. MRSA and MR-CONS are considered resistant to all Beta-lactam antibiotics except cepham with anti-MRSA activity (eg., Ceftaroline and Ceftobiprole).
2. All MSSA and MS-CONS isolates are likely to respond to drugs like Cloxacillin, Dicloxacillin, Flucloxacillin, Nafcillin, Cefazolin, β -Lactams and β -Lactam Inhibitor Combinations.

Percentage Sensitivity of Gram-Negative organisms (Blood)

Organism (n=255)	Isolates %	Ceftriaxone	Ceftazidime	Cefepime	Ampicillin + Sulbactam	Piperacillin + Tazobactam	Cefoperazone + Sulbactam	Ciprofloxacin	Amikacin	Imipenem	Tigecycline	Tobramycin	Cotrimoxazole
<i>E.coli</i>	7.8%	15	18	-	-	55	70	20	50	60	90	-	-
<i>Klebsiella</i>	6.3%	18	25	-	-	40	68	34	51	58	93	-	-
<i>Pseudomonas</i>	32.5%	-	56	63	-	65	62	58	72	73	-	69	-
<i>Acinetobacter</i>	36.5%	-	10	14	25	14	36	23	20	23	72	-	-
<i>Burkholderia</i>	14.9%	-	76	-	-	-	75	46	-	77	52	-	76

Note: Colistin and Polymyxins are to be tested by MIC only, for that reason they are not mentioned in the antibiogram.

(-) Drugs either intrinsically resistant or not tested.

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Antibiogram of Urine (July 2023 - Dec 2023)

Total samples	3580	
Culture positive	1044	22%
Culture-negative	2536	70%
Total Gram Positive	200	19%
Total Gram Negative	727	70%
Yeast	117	11%

Gram Positive Organisms

<i>Enterococcus spp.</i>	190	95%
<i>Staphylococcus aureus</i>	10	5%
MRSA	4	40%
MSSA	6	60%

Gram Negative Organisms

<i>E. coli</i>	400	55%
<i>Pseudomonas spp.</i>	170	23%
<i>Klebsiella spp.</i>	150	20%
<i>Acinetobacter spp.</i>	4	0.5%
<i>Citrobacter spp.</i>	1	0.1%
<i>Proteus spp.</i>	1	0.1%
<i>Enterobacter spp.</i>	1	0.1%

Percentage Sensitivity of Gram - Negative Organisms

Organisms (n=727)	No. Of Isolates	Percentage of Isolates	Ceftriaxone	Cefepime	Piperacillin + Tazobactam	Cefoperazone + Sulbactam	Levofloxacin	Gentamicin	Amikacin	Imipenem	Cefazolin	Fosfomycin	Ceftazidime + Clavulanic acid
<i>E.coli</i>	400	55%	26%	40%	65%	64%	20%	60%	80%	80%	20%	94%	x
<i>Klebsiella spp.</i>	150	20%	22%	44%	51%	56%	24%	52%	62%	60%	40%	82%	x
<i>Pseudomonas spp.</i>	170	23%	x	40%	60%	62%	18%	48%	44%	55%	x	x	55%

Percentage Sensitivity of Gram - Positive Organisms

Organisms (n=200)	No. Of Isolates	Percentage of Isolates	Penicillin	Ampicillin	Amikacin	Linezolid	Levofloxacin	Ciprofloxacin	Fosfomycin	Gentamicin
<i>Enterococcus</i> <i>spp.</i>	190	95%	60%	65%	45%	100%	20%	12%	90%	50%
MRSA ¹	4	40%	x	x	65%	100%	21%	15%	93%	57%
MSSA ²	6	60%	x	x	70%	100%	19%	21%	95%	60%

NOTE:-

- All MRSA are considered resistant to all β -Lactams including Penicillins, β -Lactam combination agents, Cepheims (except those with anti - MRSA activity e.g., Ceftaroline and Ceftobiprole).
- All MSSA isolates are likely to respond to drugs like Cloxacillin, Dicloxacillin, Flucloxacillin, Nafcillin, Cefazolin, β -Lactams and β -Lactam Inhibitor Combinations.

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**Antibiogram Pus And Body Fluids
(July 2023 - December 2023)**

Total Number of Samples	3816	
Total Positives	1526	40%
Sterile Samples	2098	55%
Contaminated Samples	192	5%

Breakdown Of Positive Samples

Gram Positive Organisms	412	27%
Gram Negative Organisms	1114	73%

Gram Positive Organisms

Organisms	Type	No. of isolates	Percentage
<i>Staphylococcus aureus</i>	MRSA	206	59%
	MSSA	144	41%
<i>Enterococcus spp</i>		62	15%

Gram Negative Organisms

Organisms	No. of isolates	Percentage
<i>Escherichia coli</i>	334	30%
<i>Klebsiella spp.</i>	267	24%
<i>Acinetobacter spp.</i>	223	20%
<i>Pseudomonas spp.</i>	190	17%
<i>Citrobacter spp.</i>	44	4%
Others (<i>Enterobacter, Proteus, Burkholderia, Stenotrophomonas</i>)	56	5%

MRSA Percentage Sensitivity pattern

Drugs	Sensitivity
Linezolid	100%
Tetracycline	86%
Levofloxacin	10%
Erythromycin	27%
Clindamycin	61%
Teicoplanin	98%
Ciprofloxacin	12%
Cotrimoxazole	60%
Tigecycline	100%

NOTE:- All MRSA & MRCoNS isolates are deemed to be resistant to all β -lactams including Penicillins, β -lactam combination agents, Cephems (except those with anti-MRSA activity e.g., Ceftaroline and Ceftobiprole)

MSSA Percentage Sensitivity pattern

Drugs	Sensitivity
Linezolid	100%
Tetracycline	90%
Levofloxacin	20%
Erythromycin	64%
Clindamycin	85%
Ciprofloxacin	25%
Tigecycline	100%
Cotrimoxazole	70%

NOTE:- All MSSA & MSCoNS isolates are likely to respond to drugs like Cloxacillin, Dicloxacillin, Flucloxacillin, Nafcillin, Cefazolin, β -Lactams and β -Lactam Inhibitor Combinations.

Enterococcus spp Percentage Sensitivity pattern

Drugs	Sensitivity
Linezolid	100%
Vancomycin	88%
High Level Gentamicin	55%
Ampicillin	70%
Penicillin	74%

***Escherichia coli* Percentage Sensitivity pattern**

Drugs	Sensitivity
Tigecycline	97%
Levofloxacin	15%
Amikacin	75%
Cefoperazone-sulbactam	68%
Piperacillin-tazobactam	58%
Imipenem	60%
Ceftazidime-tazobactam	59%
Ceftriaxone	22%
Ampicillin-sulbactam	7%

***Klebsiella spp* Percentage Sensitivity pattern**

Drugs	Sensitivity
Tigecycline	94%
Levofloxacin	25%
Cefoperazone-sulbactam	54%
Piperacillin-tazobactam	40%
Ceftriaxone	15%
Imipenem	50%
Ceftazidime-tazobactam	40%
Amikacin	52%

***Pseudomonas spp* Percentage Sensitivity pattern**

Drugs	Sensitivity
Cefipime	62%
Levofloxacin	52%
Piperacillin-tazobactam	72%
Ceftazidime-tazobactam	57%
Tobramycin	65%
Imipenem	63%