

Correspondence

Methicillin resistant *Staphylococcus aureus* (MRSA) in Malwa region of Punjab (North-West India)

Sir,

Methicillin resistant *Staphylococcus aureus* (MRSA) has emerged as a dangerous pathogen of hospital acquired infection and is also spreading in the community^{1,2}. We report here data on this infection from a teaching hospital located in North-West India.

During 2012-2013, a total of 248 *Staphylococcus aureus* isolates obtained from various clinical specimens like pus, blood, urine, body fluids, catheter tips *etc.* of the patients visiting Guru Gobind Singh Medical College (GGSMC) and Hospital, Faridkot, Punjab, India, were studied. Of these, 161 (64.9%) were detected as MRSA and 87 (35%) as methicillin sensitive *Staphylococcus aureus* (MSSA) by observing their resistance to cefoxitin (30 µg) disc³. Further confirmation of methicillin resistance was done by demonstration of *mecA* gene by PCR⁴. Overall, MRSA was found in 64.9 per cent (161/248) samples which was higher than the prevalence reported in Indian Network of Surveillance of Antimicrobial Resistance (INSAR) study (41%)¹ but was in the range (22 to 68%) observed by various centres participated in the study¹. The MRSA increased from 60.5 per cent (92/152) in 2012 to 71.8 per cent (69/96) in 2013, but the difference was not significant. Similar increase has also been reported by six of the 15 tertiary care centres during the two years period (January 2008 to December 2009) of the surveillance¹.

In our study, the isolation rates of MRSA from non-ICU inpatients (50% in 2012; 69.6% in 2013) were higher than that of outpatients (29.3% in 2012; 18.8% in 2013) and ICU patients (20.7% in 2012; 13% in 2013). This was in contrast to the INSAR study where the isolation rates of MRSA were maximum from ICU followed by non-ICU inpatients and outpatients¹. The study of *S. aureus* isolates from various clinical specimens at our centre showed that maximum isolates were from skin and soft tissue

infections followed by blood stream infections and respiratory infections.

Susceptibility to various antibiotics is shown in the Table. Similar to the various studies of the INSAR surveillance¹, we observed that MRSA isolates were more resistant to antimicrobial agents in comparison to MSSA. However, this difference was not significant for erythromycin, clindamycin, gentamicin and ciprofloxacin. However, for ampicillin and co-trimoxazole the difference was found to be significant ($P<0.001$). All *S. aureus* isolates were sensitive to vancomycin and linezolid.

Table. Antibiotic susceptibility results of 248 isolates of methicillin resistant (n=161) and methicillin sensitive (n=87) *Staphylococcus aureus* (2012-2013)

Antibiotics	Isolate	Sensitive No. (%)	Resistant No. (%)
Erythromycin	MRSA	59 (36.6)	102 (63.3)
	MSSA	39 (44.8)	48 (55.2)
Clindamycin	MRSA	113 (70.2)	48 (29.8)
	MSSA	66 (75.9)	21 (24.1)
Gentamicin	MRSA	132 (82)	29 (18)
	MSSA	77 (88.5)	10 (11.5)
Ciprofloxacin	MRSA	49 (30.4)	112 (69.6)
	MSSA	34 (39)	53 (61)
Vancomycin	MRSA	161 (100)	0
	MSSA	87 (100)	0
Linezolid	MRSA	161 (100)	0
	MSSA	87 (100)	0
Ampicillin	MRSA	29 (18)	132 (82)***
	MSSA	53 (61)	34 (39)
Co-trimoxazole	MRSA	69 (42.9)	92 (57.1)***
	MSSA	63 (72.4)	24 (27.6)

*** $P<0.001$ compared to MSSA

Thus, our results showed a high and increasing isolation rates of MRSA in the Malwa region of Punjab. This underscores the need of judicious use of antibiotics and strengthening of the implementation of infection control measures. Although the MRSA and MSSA isolates in our study showed sensitivity to glycopeptides and linezolid, but their use should be cautiously preserved for MRSA isolates only as reports of reduced susceptibility to vancomycin [vancomycin intermediate *Staphylococcus aureus* (VISA) and vancomycin resistant *Staphylococcus aureus* (VRSA)] have already been reported⁵.

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