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Detection of fusidic acid resistance determinants among *Staphylococcus aureus* isolates causing skin and soft tissue infections from a tertiary care centre in Chennai, South India

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Background

Fusidic acid (FA)- an inhibitor of protein synthesis has been used for treating superficial and some systemic infections caused by *Staphylococcus aureus*. Fusidic acid resistance in *S. aureus* has been reported throughout the world with prevalence ranging from 0.5% to 50% and is due to i) point mutation in bacterial *fusA* or *fusE* gene and ii) by acquired FA resistance determinants *fusB*, *C* and *D*. Indian report of fusidic acid resistant *S. aureus* (FRSA) is based on phenotypic detection. Hence, this study was done to detect acquired FA resistance determinants.

Methods

The study included 54 isolates of *S. aureus* collected from skin infections between Jan to Mar 2011 from a tertiary hospital in Chennai. MRSA was screened by cefoxitin disc diffusion method and PVL-MRSA detection was done by multiplex-PCR. FA resistance was screened by disc diffusion method and acquired resistance determinants were detected by multiplex-PCR.

Results

Of the 54 *S. aureus* isolates, 32(59.2%) were found to be MRSA. A total of 13(24.1%) isolates were found to carry *pvl* gene of which 4 were MRSA. Two of the 54(3.7%) isolates were found to be FRSA and harbored *fus*C gene. Both FRSA isolates were from non-hospitalized patients and they were using FA for topical treatment.

Conclusion

We report for the first time in India the presence of acquired FA resistant determinant *fus*C gene in community isolate of methicillin susceptible *S. aureus*. Indiscriminate use of FA needs to be avoided to prevent the emergence of FRSA.

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