



Letter:

Significance of Screening for Colonization and Vancomycin Resistance in *Staphylococcus aureus* Isolated from Anterior Nares of School Going Children

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Staphylococcus aureus infections form a major part of hospital acquired infections.¹ Although 20-40% of healthy individuals carry *S. aureus* in the anterior nares, it continues to be a major cause of both hospital and community acquired infections around the world. *S. aureus*, not only has a unique epidemiological pattern, but also can develop resistance to antibiotics. Because of its exceptional ability to colonise patients and healthy individuals, it is responsible for wide spread epidemics. In late 1930's, when Sulphonamides offered the first challenge to *S. aureus* infections and later in the early 1940's by Penicillins, over a period of time, *S. aureus* is constantly emerging resistant to a wide variety of antibiotics such as Semisynthetic Penicillins, aminoglycosides, macrolides, quinolones, glycopeptides and many other class of antibiotics.² For more than three decades, vancomycin has been a reliable treatment for multidrug resistant *S. aureus* infections. But with the discovery of *S. aureus* strains with reduced susceptibility to Vancomycin in 1996 in Europe, Asia and US, hinders our efforts to clarify the effectiveness of Vancomycin in the treatment of Staphylococcal infections. Of late there have been increasing reports of Vancomycin intermediate (VISA) and Vancomycin resistant (VRSA) Staphylococcal strains both in hospital and community.³

There are growing reports of treatment failures with vancomycin since NCCLS disk diffusion and stokes methods for antibiotic susceptibility testing are not accurate predictors of reduced Vancomycin Susceptibilities in Staphylococci and due to the inability of laboratories to differentiate between vancomycin susceptible *S. aureus* strains (MIC < 4 µg/ml) that have Vancomycin resistant subpopulations (1 in 10⁸ CFU/ml). We collected 392 anterior nares swabs from schoolgoing children and isolated 63 *S. aureus* isolates. The antimicrobial susceptibility testing by Agar dilution method was performed on all isolates and the control strains tested included *Staphylococcus aureus* ATCC 24923, *Pseudomonas aeruginosa* ATCC 27853, *E. coli* ATCC 25922

The test was considered valid only when the MIC's of the control strains were in the range given by NCCLS standards.⁴ The results of the study indicate colonization rates of 16% and the MIC's of vancomycin were found to be 0.5-2 µg/ml. The res-

ults of our study though indicate a carriage rate of 16%, the significant finding of the study is the occurrence of strains with MIC's of 1-2 µg/ml which are responsible for treatment failures that may contain Vancomycin resistant subpopulations which if are not recognized and contained, can spread and lead to large scale outbreaks. Growing number of infections by multidrug resistant *S. aureus* and a discernible increase in Vancomycin use eventually leading to emergence of VRSA.⁵

We suggest that inappropriate and indiscriminate use of antibiotics should be avoided and stress the importance of rational use of antimicrobial agents, use of standard methods for antimicrobial susceptibility testing, frequent monitoring of community isolates for colonization and their antibiotic resistance to win the war against emerging multi drug resistance.

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