

Introduction

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Staphylococcus aureus is a versatile human pathogen causing infections ranging from relatively mild involvement of skin and soft tissue to life threatening sepsis. The organism causes illness through production of numerous cell surface and secreted virulence factors, and disease is facilitated by its propensity to develop resistance to multiple antibiotics (Fey et al., 2003).

However, since the introduction of methicillin into clinical use, methicillin –resistant *S. aureus* (MRSA) strains have emerged worldwide as important nosocomial pathogens (Hiramatsu et al., 2002).

The possibility of emergence of resistance to vancomycin demands quick and trustworthy characterization of the isolates and investigation of clonal spreading within hospitals to permit control of these infections (Trindade et al., 2003).

Numerous studies have shown that clinical infections by multidrug – resistant organisms such as MRSA represent a minute fraction of the vast population of asymptomatic colonized patients –most of whom are unrecognized –which constitutes the institutional reservoir for spread of these organisms on the hands, apparel, or equipment of health care workers to uncolonized but susceptible patients (Safdur et al., 2002).

A rapid latex agglutination test based on detection of PBP2a has been used for the detection of MRSA .This method employs latex particles coated with monoclonal antibodies to PBP2a which is extracted from the test colonies(**Brown ,2001**).

Molecular methods for the rapid identification of methicillin resistant *Staphylococcus aureus* (MRSA) are generally based on the detection of *S.aureus* –specific gene target and the *mec A* gene .However ,such methods cannot be applied for the direct detection of MRSA from nonsterile specimens without the previous isolation ,capture, or enrichment of MRSA because these samples often contain both coagulase –negative staphylococci(CoNS)and *S.aureus* ,either of which can carry *mec A* gene .However ,a real –time multiplex PCR assay allows the detection of MRSA directly from clinical specimens containing a mixture of staphylococci in < 1h (**Huletsky et al .,2004**).