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INTRODUCTION

Staphylococcus aureus is a virulent Gram-positive bacterial pathogen, which is the leading cause of bloodstream infections and other severe infections in various tissues, *eg* joint fluid, lung, skin, and surgical sites (Durmaz *et al*, 2014). *S. aureus* can be divided into two types, methicillin-susceptible (MSSA) and methicillin-resistant (MRSA), the latter also possessing resistance to other antimicrobial agents [multidrug (MDR) resistance] (Becker *et al*, 2015). MRSA resistance to all beta-lactam antimicrobials is due to carriage of *mec*A, encoding a penicillin-binding protein (PBP2a) with low binding affinity for anti-beta-lactams, although in rare cases resistance to methicillin results from expression of *mec*C (CLSI, 2019; Cong *et al*, 2020). The first MRSA strain was reported in 1961 from a staphylococcal clinical isolate in the United Kingdom (Jevons, 1961), and since then MRSA has spread worldwide, being present in Africa, Asia, Europe, the Middle East, and USA (Lakhundi and Zhang, 2018; Guo *et al*, 2020).

Lincosamides, macrolides and streptogramin B are often used to treat staphylococcal diseases (Yilmaz *et al*, 2007; Mallikarjun *et al*, 2015). Resistance to macrolides in *S. aureus* occurs by two mechanisms, namely, post-transcriptional methylation of 23S bacterial ribosomal RNA leading to cross-resistance to macrolides, lincosamides and streptogramin B (MLSB-resistant phenotype) and an efflux mechanism (Weisblum, 1995). An MLSB resistance mechanism can be constitutive or inducible (*eg* by erythromycin) (Shidiki *et al*, 2019). Treatment failure can occur if inducible MLSB resistance mechanism is not identified (usually by specific microbiological techniques) (Vandana *et al*, 2009). Standard antibiogram profiling may not detect inducible MLSB phenotype.

Nosocomial MRSA has serious health and economic impacts (Al Bshabshe *et al*, 2020). A 1998 - 2001 survey of 32 hospitals in Thailand observed MRSA prevalence of 24-36%, and a January - May 2005 survey at Siriraj Hospital, Bangkok, central Thailand, revealed a higher prevalence, 41.5% (Mekviwattanawong *et al*, 2006). A subsequent study (August 2012 - July 2015) at Thammasat University Hospital, Pathum Thani Province (adjacent to Bangkok) found even higher MRSA prevalence, 46% (Phokhaphan *et al*, 2017). However, there was a declining trend, a MRSA prevalence of 38% was observed at Thammasat University Hospital in 2015 in the same study, and a 2017 survey at Chulalongkorn Memorial Hospital (a tertiary care university hospital in Bangkok) reported MRSA prevalence of 17% (Waitayangkoon *et al*, 2020). Outside Bangkok, a 2006 - 2014 survey in two provinces, namely, Sa Kaeo Province (in eastern Thailand,