

UNIVERSITI TEKNOLOGI MARA



**THE PREVALENCE OF METHICILLIN-RESISTANT
STAPHYLOCOCCUS AUREUS (MRSA) AT HOSPITAL
TUANKU JA'AFAR SEREMBAN (HTJS)**

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ABSTRACT

PREVALENCE OF METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS (MSRA) AT HOSPITAL TUANKU JA'AFAR SEREMBAN (HTJS)

Objectives: The aim of this study was to determine the prevalence of Methicillin-resistant *Staphylococcus aureus* (MRSA) in Hospital Tuanku Ja'afar Seremban (HTJS) from April 2014 to August 2014. The prevalence was studied based on the age, gender, type of clinical samples and the sensitivity patterns of the MRSA. **Methods:** Cross-sectional study was used to proceed this study. Total of 408 cases of *Staphylococcus aureus* were collected for the analysis of Methicillin-resistant *Staphylococcus aureus* (MRSA). The cases were randomly taken within the study duration with at least 50 cases must be taken to control the significance of the research. Age, gender, types of clinical samples and sensitivity patterns information were all collected from the patient's request forms and sensitivity forms that belongs to the Department of Microbiology at Hospital Tuanku Ja'afar Seremban (HTJS). **Results:** Out of 408 cases, 219 cases have turned out to be MRSA. Patients with age range between 51 to 65 years have the highest percentage of being infected by MRSA with 29.2%. With 73.8%, male have higher percentage of becoming the victim of MRSA than female. Of all the various clinical samples collected, pus and wound swab tend to be the most site of infection of MRSA. From 9 antimicrobial disks used to test the sensitivity of MRSA, only vancomycin has the 100% sensitive to MRSA.

Keywords : MRSA, clinical samples, sensitivity pattern

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CHAPTER 1

INTRODUCTION

1.1 Background of the study

Staphylococci are Gram-positive spherical bacteria that occur in microscopic clusters resembling grapes. Bacteriological culture of the nose and skin of normal human invariably yields staphylococci. *Staphylococcus aureus* colonizes mainly the nasal passages but it may be found regularly in most anatomical locales such as oral cavity, skin and gastrointestinal tract (Todar, n.d.).

Methicillin resistant *Staphylococcus aureus* (MRSA) is a type of *staphylococcus* bacteria that is resistant to beta-lactam antibiotics (Lights & Solan, 2012). This class of antibiotics includes penicillin, amoxicillin, methicillin, oxacillin and others. The first strains of *S. aureus* that resisted methicillin were identified in 1961 by British scientists and in 1968 the first reported human case of MRSA in the United States came. The scientists believe that the use of antibiotics including misuse and overuse has aided natural bacterial evolution by helping the microbes become more resistant to drugs designed to help fight these infection (Antimicrobial (Drug) Resistance, 2008).

Presently, the most common isolated organism among inpatients in Malaysian Hospitals is staphylococcal infection. The rate of isolation ranges from 1.6 to 5.5 per 100 patients. About