PREVALENCE OF MRSA IN A PERIPHERAL HOSPITAL OF LAHORE

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ABSTRACT

The rate of MRSA in increasing in hospitalized patients all over the world. The present study is done to find out the pravalence of MRSA in a peripheral hospital of Lahore over a period of one year from January to December 2009. Study was done by finding out percentage of MRSA among all the Staphylococcus Aureus isolated from admitted patients of ghurki trust teaching hospital. Results show that 50% of all the S. Aureus were MRSA.

INTRODUCTION

The emergence of antibiotic resistance in microorganisms and their spread is threatening the medical community world wide.[1] MRSA (methicillin resistant staphylococcus aureus) is one of such examples. MRAA by definition is any strain of Staphylococcus aureus that is resistant to a large group of antibiotics called the beta – lactams, which include the penicillins and the cephalosporins.[2]

MRSA emerged as a nosocomial pathogen in the early 1960s.[3] Most occurrences were isolated in sporadic outbreaks but in the 1970s, an increasing number of large hospital outbreaks were reported in many countries including the USA, Europe, Japan, and Australia.[4] MRSA is frequent cause of infections of skin and soft tissue, respiratory tract, bones and joints, surgical wounds urinary tract and bloodstream. These infections are difficult to treat because of their resistance to commonly used antibiotics.[5]

The increase prevalence of MRSA is a major cause of morbidity and mortality in hospitals during the last decade.[6] There are limited choice of antimicrobial agents to treat many serious life – threatening infections caused by MRSA leading to prolonged stay of such patients in the hospital and increased cost of care.[7] It is very essential to know the prevalence of MRSA in any environment, because of the public health importance and the threat poses by MRSA infection.[8] This present study is carried out to find out the extent of MRSA infection in hospitalized patients of Ghurki trust teaching hospital, Lahore.

MATERIALS AND METHODS

The study was carried out on clinical samples received from admitted patients of Ghurki trust teaching hospital who were found infected with *Staphylococcus aureus* from January to December 2009. Clinical specimens were cultured on Blood and MacConkey agar for 24 – 48 hours at 37°C. Isolates were identified by colony morphology, catalase and co-agulase test. *S. aureus* isolates were tested for methicillin resistance by Kirby – Bauer disk diffusion technique according to NCCLS guidelines using 1 μg oxacillin disk and nutrient agaar. Zone of inhibition around the disk measuring < 10 mm after 24 hours of incubation at 37°C were interpreted as positive.

RESULTS

Out of 100 staphylococcal aureus cultures recovered from different clinical samples of pus, tissue, body fluids, blood, sputum, urine, catheter tips and tubes 50 (50%) were found to be Methicillin resistant. The distribution of MRSA in different clinical samples is shown in table.

Table 1: *Distribution of Staph aureus and MRSA among varuous clinical samples.*

Nature of clinical samples	Staph aureus (n = 100)	MRSA (n = 50)
Pus	60	35
Catheter tips	10	2
Body fluids	12	3
Granulation tissues	18	10

Data Analysis

Frequency of the MRSA isolates from clinical specimens was calculated in percentage as total number of MRSA isolates out of total number of *Staphylococcus aureus* isolates.

DISCUSSION

Prevalence of MRSA has steadily increased all over the world in the last two decades.[9] In our study 50% of all the S. aureus isolated in one year are MRSA.

A previous study from Lahore revealed 38.5% MRSA out of all isolats of S. aureus.[10] In a study from Rawalpindi, data shows that frequency of MRSA among all nosocomial isolates of S. aureus

increased from 39% in 1996 to 51% in 2003.[11] This clearly shows a rising trend of MRSA in our hospital setting over the years.

Fourty two percent MRSA from various laboratories all over the Pakistan has been reported by Hafiz et al.[12] In a study from Rawalpindi published in 2007, it has been shown that 42% of nosocomial infection are due to MRSA.[13] In another study of 2007 from Karachi 43% MRSA were reported.[14] In a recent study published in 2008 from AFIP, MRSA were identified in 62% cases.[15] This shows that rate of MRSA related infections is high in almost all parts of country.

It is *concluded* that MRSA is a global problem and its rate is high in our hospitals. Regular studies should be done to all settings to know whether the rate is increasing, decreasing or steady.

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