"DETECTION OF METHICILLIN RESISTANT *STAPHYLOCOCCUS AUREUS* (MRSA) IN TERTIARY CARE HOSPITAL OF NORTH KARNATAKA."

Thesis submitted to the

B. L. D. E. (DEEMED TO BE UNIVERSITY), VIJAYAPUR KARNATAKA, INDIA

Under the faculty of

MEDICINE

For the Award of the Degree of

Doctor of Philosophy (Medical)

Subject: Microbiology.

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2019

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Declaration

I declare that the thesis entitled **"DETECTION OF METHICILLIN RESISTANT *STAPHYLOCOCCUS AUREUS* (MRSA) IN TERTIARY CARE HOSPITAL OF NORTH KARNATAKA."** has been prepared by me under the guidance of **Dr B.V. Peerapur,** Professor and Head, Department of Microbiology, Raichur institute of medical sciences(RIMS), Raichur, Karnataka, India. (Former professor and Head, Department ofMicrobiology, Shri B. M. Patil medical college, Hospital and researchcentre, Vijayapura) No part of this thesis has formed the basis for the award of any degree or fellowship previously.

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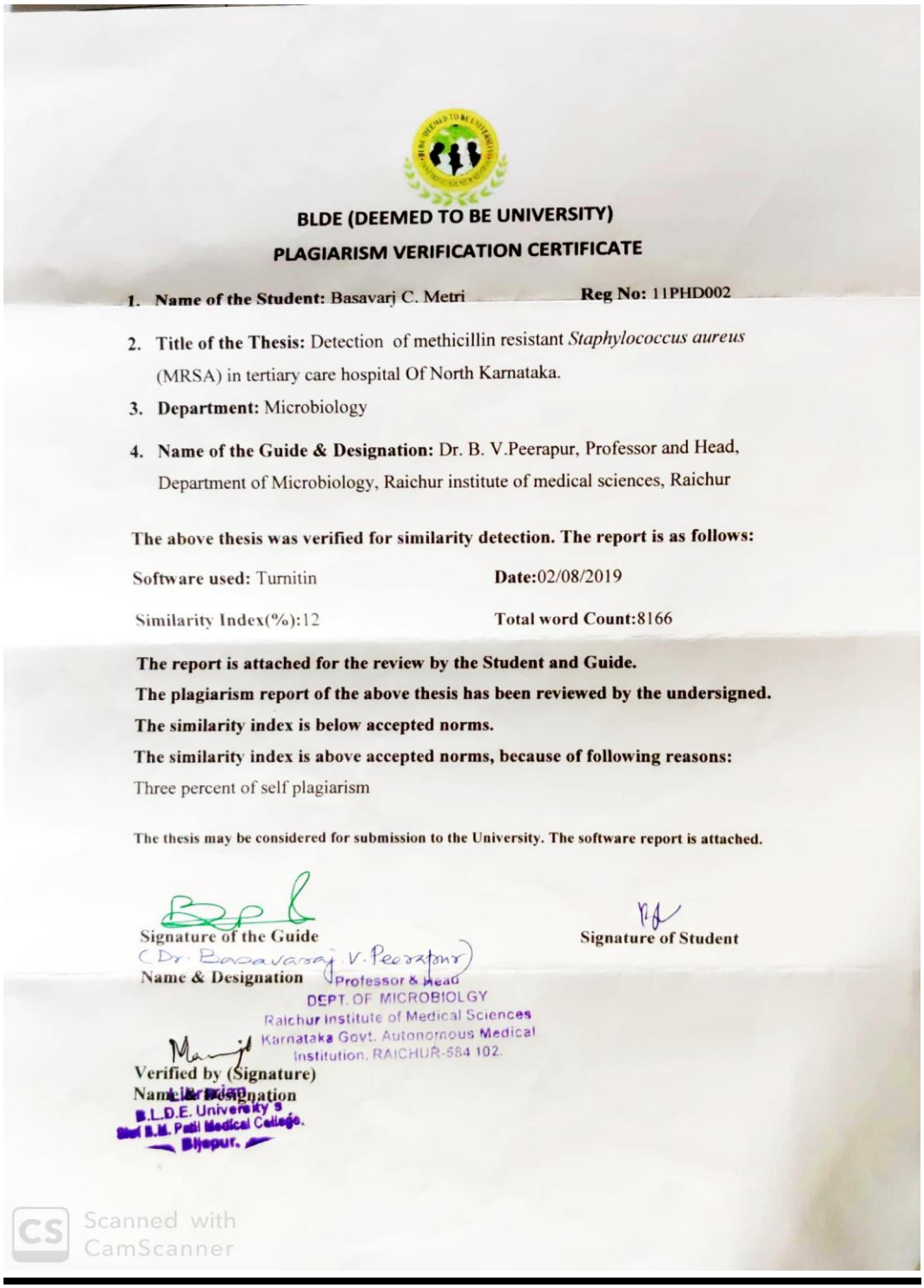

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Acknowledgement

Firstly, I express my sincere gratitude to my guide,**Dr B.V. Peerapur,** Professor and Head, Department of Microbiology, Raichur institute of medical sciences(RIMS), Raichur, Karnataka (Former Professor and Head of Microbiology, B.M. Patil Medical College, Hospital and Research Centre, Vijayapura) for his masterly directions, constant support and eminent guidance, at every stage of this study. He has placed a full faith and undoubted trust in me which helped me a lot in carrying out my research work successfully.

My Sincere thanks to Professor **Kusal K Das,** Dept of Physiology, Shri B. M. Patil Medical College, Hospital & Research Centre, Vijayapura, for his great ideas, untiring guidance, affectionate & constant encouragement to complete this research work.

I owe my most sincere gratitude to **Dr M. S. Biradar, Vice Chancellor,** BLDE (Deemed to be University) for the help and support.

I owe my most sincere gratitude to **Dr. Aravind V. Patil.** Principal, Shri B. M. Patil Medical College, Hospital & Research Centre, for the help and support.

I owe my most sincere gratitude to **Dr J G Ambekar** Registrar ,BLDE (Deemed to be University) and **Mr Satish Patil** Dy. Registrar ,BLDE (Deemed to be University) for the help and support.

I would like to express my very great appreciation to the Vice-principal, Shri B. M. Patil Medical College, Hospital & Research Centre **Dr Tejashwini Vallabha,** for her support.

I express heartfelt thanks to all the **Members of PhD committee** ,BLDE (Deemed to be University) for correcting my mistake throughout my tenure.

I am sincerely indebted to **Dr A.Y. Takpere,** Professor and Head of the Department of Microbiology, Shri B. M. Patil Medical College, Hospital & Research Centre, Vijayapura for her support.

I would like to express my sincere gratitude to **Dr Kishore Bhatt** sir and **Mr Manohar** for coordination during the study.

I would like to extend my warm thanks to my father **Shri Chandrashekhar Metri,** my mother **Late Smt Bandawwa,** sister **Smt. Shivaleela Holagi,** mama **Shri Prabhakar Holagi,** sister **Smt. Shashikala Tippimani,** mama **Jagadish Tippimani,** brother **Shri Siddappa Metri,** bhabhi **Smt.Anita Metri,** father in Law **Shri Parameswarappa N,** my mother in Law **Smt. Malati P,** brother in Law **Shri Harsha P.** and Wife **Jyothi P** and my lovely kids **Deepali and Gagana** without their support and help, I could not dedicate toresearch and it would have been extremely difficult for me to accomplish this thesis.

I wish to acknowledge the help provided by all my colleagues of **Department of Microbiology**. I extend my thanks to all the non-teaching staff of Department of Microbiology for assistance during my thesis.

I sincerely take an opportunity to acknowledge gratitude to all the people without whom this thesis would not have been possible.

Dr. Basavaraj C. Metri

Date:

Abstract:

Introduction : Methicillin resistant *Staphylococcus aureus* strains emerged after the introduction of methicillin. It leads to various type of skin infections, osteoarthritis and respiratory tract infections and other infections in humans. The objectives of the study included 1.To evaluate different screening tests for detection of Methicillin resistant *Staphylococcus aureus* . (MRSA) 2.To know the antimicrobial profile of MRSA strains. 3.To detect of *mec A* gene by molecular methods(PCR) and Molecular identification of MRSA by detection of SCCmec .4.To compare different phenotypic methods with PCR for identification of MRSA.

Methods: The current study was conducted in Microbiology Department, SBMPMCHRC, Vijayapur.A total of 383 *S.aureus* were identified and antimicrobial susceptibility pattern studied for three years period. Stastistical analysis: Values were expressed in terms of Mean ± SD. Analysis was done by using SPSS software version 16. MRSA were detected byThe Cefoxitin Disc Diffusion Test and The Oxacillin Disk Diffusion Method. Genotypic detection of MRSA was done by identification of mec A gene by PCR **.** Molecular characterisation of MRSA isolates were carried out by detection of various staphylococcal cassette chromosome mec (SCCmec) by Multiplex PCR.

Results: The current study revealed the prevalence of MRSA in the tertiary care center in this part of India is very high(48.6%.). The prevalence of MRSA was more prevalent in males. More number of MRSA were from pus samples (76%). Higher rate of MRSA isolates were from department of Surgery (56.5%). Linezolid (89% sensitive), tetracycline (86%) vancomycin (83%) showed better results against MRSA. Out of 186

isolates of MRSA, oxacillin and cefoxitin detected 80%, 96% MRSA respectively. Results of cefoxitin disc diffusion by cefoxitin is in agreement with the PCR for identification of *mecA* gene.. We found a higher number of multidrug-resistant MRSA (76.8%) in our hospital. This study shows that the prevalent MRSA strains in Vijayapur are *SCCmec-III* and *SCCmec-II.*

Conclusion: In the current study, the prevalence of MRSA in the tertiary hospital in this part of India is very high. Therefore, it is mandatory to choose suitable antibiotics with respect to their antimicrobial pattern for treating the infections .Results of disc diffusion test by cefoxitin is in agreement with *mecA* gene detection by PCR, and therefore the disc diffusion test by cefoxitin is ideal for detection of MRSA and the test can be better alternative to PCR for detection of MRSA in resource poor settings. We found a higher number of multidrug-resistant MRSA in our hospital. If we look into the Indian setting , it seems the burden drug resistant-MRSA is increasing over time. This study shows that the prevalent MRSA strains in Vijayapur are *SCCmec-III* and *SCCmec-II*.

CONTENTS

List of tables

List of Charts/Figures

Abbreviations

- MRSA :Methicillin resistant*Staphylococcus aureus*
- MSSA*:* Methicillin sensitive *Staphylococcus aureus*
- *S aureus : Staphylococcus aureus*
- SCC :Staphylococcal cassette chromosome
- *CoNS : Coagulase Negative Staphylococci*
- TSST : Toxic shock syndrome toxin
- MIC : Minimum inhibitory concentration
- ABC : ATP Binding Cassette
- MFS : Major facilitator super family
- PCR : Polymerase chain reaction
- CLSI : Clinical and laboratory standards institute
- CFU : Colony forming unit
- HCW : Health care worker

1.Introduction

INTRODUCTION:

Staphylococcus aureus was first described by Sir Alexander Ogston in 1882. This centuries-old pathogen still causes significant morbidity and mortality despite huge advances in medical care. Indeed, infections due to S. aureus continue to grow in number and complexity as a consequence, ironically, of advances in patient care and of its ability to adapt to a changing environment.[1-2]

Tahnkiwale SS[4] in his article has stated that *"Staphylococcus aureus* is one of the most frequent bacterial pathogens in humans. It causes skin infections, osteoarthritis and respiratory tract infections and other infections in humans."[3] "*Staphylococcus aureus* has been reported to be the a major cause of community and hospital acquired infection".[4]

According to Anupurba S [6] "Methicillin resistant *Staphylococcus aureus* (MRSA) strains emerged after the introduction of methicillin into the clinical practice".[5] "MRSA strains were initially described in 1961 and emerged in the last decade as one of the most important nosocomial pathogens. Infected and colonized patients provide the primary reservoir and transmission is mainly through hospital staff. The risk factors which contribute to MRSA are excessive antibiotic usage, prolonged hospitalization, intravascular catheterization and hospitalisation in intensive care unit. With the increased incidence of MRSA, the effectiveness of penicillin and cephalosporins is questioned. In fact many strains of MRSA exhibit resistance to beta -lactams and aminoglycosides." [6]

"The worst feature of MRSA has been simultaneous drug resistance to many of the antibiotics, chronic carrier stage among health care workers and greater resistance of the strains." [7]

The current study was undertaken to analyze various techniques for detection of MRSA and know the prevalence of MRSA and their antimicrobial profile.

2. Objectives

OBJECTIVES OF STUDY:

- To evaluate different screening tests for detection of Methicillin resistant *Staphylococcus aureus* . (MRSA)
- To know the antimicrobial profile of MRSA strains.
- To detect of *mec A* gene by molecular methods.(PCR) and Molecular characterisation of MRSA strains by detection of SCCmec .
- To compare different phenotypic methods with PCR for identification of MRSA.

3. Review of Literature

REVIEW OF LITERATURE

Boucher HW.[1]stated that "Micrococcus, which when limited in its extent and activity, causes acute suppurative inflammation (phlegmon), produces, when more extensive and intense in its action on the human system, the most virulent forms of septicæmia and pyaemia…". "This quote from Sir Alexander Ogston in 1882 describes several facets of *Staphylococcus aureus* that continue to plague physicians in modern times. This centuries-old pathogen still causes significant morbidity and mortality despite huge advances in medical care. Indeed, infections due to *S. aureus* continue to grow in number and complexity as a consequence, ironically, of advances in patient care and of its ability to adapt to a changing environment".[1]

Deresinski S[8] has written "It was only 1 year after an Oxfordshire constable, Albert Alexander, became the first recipient of penicillin, that Rammelkamp reported the identification of isolates of *Staphylococcus aureus* resistant to this miracle drug. Infections caused by penicillin-resistant *S. aureus* were initially limited to hospitalized patients and were only later detected in the community, where they eventually became common. In an historical reprise, the identification of methicillin-resistant *S. aureus* (MRSA) was reported within 1 year after the 1960 introduction of this semisynthetic penicillin, and once again, an organism that was initially present only in hospitals later became prevalent in the community".[8-11]

According to first edition of Bergey's manual of systemic bacteriology[12] the family *Micrococcaceae* includes genera: *Staphylococcus, Micrococcus,Planococcus, Stomatococcus*. Application of modern taxonomic concepts to classify *Staphylococci* can

be said to have begun with studies of Baird Parker in 1965. According the CDC“ the genus *Staphylococci* is now classified into 32 species and 15 subspecies based on chemical composition of their cell wall components and other properties”.[13]

Staphylococcus measure 0.5-1.5µm and divide incompletely in three planes to form pairs, tetrads, short chains and clusters of variable size resembling bunch of grapes. [Greek = *Staphyle* mean bunch of grapes and *kokkos* = berry]. *Staphylococci* are non-motile, non-sporing, but can occasionally be capsulated. Theyare generally aerobes and facultative anaerobes, catalase positive, oxidase negative, utilize carbohydrates fermentatively. [14]

Colony morphology [9]:

Staphylococci produce distinctive colonies on a variety of selective andnonselective agar media. The commonly used selective media include mannitol-salt agar, lipase-salt-mannitol agar, phenylethyl alcohol, Trypticasesoy agar and Baird-parker agar base supplemented with egg yolk tellurite enrichment.[9,15] These media inhibit the growth of gram-negative bacteria, but allow the growth of *staphylococci* and other gram positive bacteria. *Staphylococci* grow well in various types of broth media, including tryptose phosphate broth, brain-heart infusion broth and nutrient broth. [15]

Habitat:[16]

S.aureus is commensal found in humans and its primary habitat is the squamous epithelium of the anterior nares; axilla, perineum and vulval skin which accounts for 67%. The superficial layers of skin are acidic due to lactic acid in sweat. *Staphylococci* can grow at this pH and most strains can grow in presence of 10% NaCl and some even at

15% NaCl. There is approximately 30% chance of infection by *S.aureus* in normal healthy population. It can be transmitted from person to person, which upon may become established as part of the recipients normal flora. Carriers play a key role in epidemiology and in the pathogenesis of infection and they are at greatest risk both for development of hospital and community acquired infections. Majority of *Staphylococcal* infections originate as endogenous heat and dry resistant, thus canpersist for long periods on fomites which in turn serve as source of infection.

Cellular components (Virulence factors):

The peptidoglycan and teichoic acid are the major components of the *staphylococcal* cell wall[16]. The biological activities of peptidoglycans includeendotoxin-like properties, complement activation, generation of chemotactic factors, inflammatory skin reaction[9,16].

Slime is a complex extracellular substance produced by many *staphylococci. S. epidermidis* and *S. capitis* produce copious amount of this substance. Continued production of slime by a growing clone of cells attached to a polymer surface results in encasement and formation of connective cell-slime clusters biofilm[9,16,17].

Once established, the bacterial biofilm may act as a penetration barrier to antibiotics. Biofilm is the material which embeds sessile bacteria adherent to prosthetic surfaces. The mechanism by which coagulase-negative *staphylococci* (CoNS) attach to prosthetic material is a complex and multiple process[9,16,18] . One important element in this pathway is the ica operon, a gene cluster encoding the production of PIA which mediate intercellular adherence of bacteria and the accumulation of multilayered biofilm[9,1619].

Verwey(1940) described an antigenic substance present in the cell walls of *Staphylococcus aureus* which is responsible for agglutination. In 1958, Jensendesignated it as PROTEIN-A. This unique protein has the ability to bind the F_C region of IgG molecules. It is bound to the cell wall peptidoglycan and also shed into the medium during growth. The presence of Protein-A on *Staphylococcus aureus* provides the basis for a novel bacteriological technique Co-agglutination, used for identification and detection of bacterial antigen in the body fluids [20]

In 1978 Todd described a multisystem illness Toxic shock syndrome(TSS) characterized by fever, hypotension, erythroderma, vomiting, diarrhea, etc. Initially it was noticed among menstruating women, who used tampons. Subsequently it has been reported in both males and females. This disease since then ascribed to infection with specific toxigenic strains of *Staphylococcus aureus* [21].

In 1981 two groups Berg doll, Reiser and cross & Schlivert, Shades and Don – reported "isolation and characterization of unique toxins produced by *Staphylococcus aureus* isolated from toxic shock syndrome patient. These were designated as pyrogenic exotoxin type-C and *staphylococcal* enterotoxin-F. Further studies indicated that these were identical and the toxin is now designated as Toxic Shock Syndrome Toxin (TSST)" [22,2 3]

Risk factors and prevention : [24]

According to CDC "risk factors for MRSA are excessive antibiotic usage, prolonged hospitalization, intravascular catheterization and hospitalisation in Intensive Care Unit [25]". Prevention of *S.aureus* infections according to CDC (1994) recommendations[25] for

preventing the spread a consensus panel's definition and management guidelines are eradication of *Staphylococcal* carriages, hospital infection control measure to prevent nosocomial infection, including pre-operative antibiotic prophylaxis [25], proper handwashing, appropriate patient isolation, prompt evaluation and intervention when an outbreak occurs, adherence to standard guidelines on disinfection and sterilization and occupational health program for health care providers[25.]

Antibiotic resistance among MRSA:

Sakoulas G in his article writes that "Historically, the development of antimicrobial resistance in Staphylococcus aureus has been rapid. Resistance to penicillin in S. aureus was noted only a year after its introduction, and, in the early 1950s, three quarters of S. aureus strains in large hospitals in many countries had become penicillin resistant. Currently, 90%–95% of clinical S. aureus strains throughout the world are resistant to penicillin. In 1959, the first antistaphylococcal penicillin—methicillin—was introduced. Within 2 years, the first methicillin-resistant S. aureus (MRSA) strain emerged"[26]

In the year 1928 Alexander Fleming made an epoch making discovery. He noted that colonies of *staphylococci* around a mould penicillium, a common laboratory contaminant, were undergoing lysis[27]. It was the oxford group of workers led by Flory and Chain did lot of experimental works and finally in 1941 the first trails with systemic penicillin began and the result was tremendous.

The *staphylococcus* on which the effect of penicillin was originally seen , had the capacity to produce an enzyme capable of destroying penicillin. Abraham and his associates reported about this enzyme in the year 1940 prior to introduction of penicillin

into human use. The factor responsible for this resistance was first designated as an enzyme penicilinase. When its specific action was noticed as the breaking of β-lactam ring of penicillin , the name was changed to β-lactamases.[27,28]

Erythromycin came at a time when antibiotic resistant *Staphylococcus aureus* presented a serious clinical problem and this drug proved effective against drug resistant *staphylococcal* infections. However too soon by the year 1953, it became clear that , strains quickly became resistant. The introduction of semisynthetic β-lactamase resistant penicillin — Methicillin in 1960 has made major therapeutic break through for *staphylococcal* infections. But unfortunately the first methicillin resistant *staphylococcus* termed MRSA, was isolated in London in just one year later in 1961, soon after the introduction of Methicillin drug in Britain by Jevons(1961)[29].

Methicillin resistance mechanism:[8]

Deresinsky in his article on MRSA states that "The mechanism of resistance to methicillin was uncovered in 1981 with the identification of reduced-affinity penicillinbinding proteins in MRSA . The altered protein, PBP2a (PBP2 in the United Kingdom), retains effective transpeptidase activity while having reduced affinity for penicillin and other available b-lactam antibiotics. PBP2a exhibit both a reduced rate-constant for acylation by b-lactams and elevated dissociation constants. These 2 factors, acting together, prevent acylation of PBP2a and thus result in b-lactam resistance . PBP2a is encoded by the mecA gene. [8] The mobile mecA gene complex is comprised of mecA together with its regulator genes, mecI and mecR, and resides within a genomic island, the staphylococcal cassette chromosome mec (SCCmec) that constitutes 1%–2% of the

~2.9 million–bp S. aureus chromosome[8]. SCCmec also contains the insertion sequence, IS431mec, as well as recombinases necessary for site-specific integration and excision. Some SCCmec types also contain various additional genetic elements, such as Tn554 (which encodes resistance to macrolides, clindamycin, and streptogramin B) and pT181 (which encodes resistance to tetracyclines) . The expression of PBP2a is induced by the binding of b-lactam antibiotics to a cytoplasmic membrane sensor-transducer receptor encoded by the mecR1 gene, triggering a signal leading to the proteolytic release of the mecI repressor from the operator region of the mecA gene. Phenotypic resistance to methicillin is variably expressed, and population analysis demonstrates that each MRSA strain has a characteristic growth profile at each concentration of methicillin examined . In contrast to this heterogeneously expressed resistance to methicillin, homogeneous resistance requires the interaction of additional factors, such as the femA–F genes that are involved in peptidoglycan synthesis" .

REVIEW OF PREVIOUS STUDIES:

Prevalence:

In a study conducted by K Rajaduraipandi et al[30] in 2006, *S.aureus* isolates, 250 (31.1%) out of 803 clinical samples were MRSA. Almost all strains were resistant to Penicillin, Ampicillin, Gentamicin, Cotrimoxazole, Cefotaxime. Multidrug resistance was observed among 63 % and all isolates were sensitive to Vancomycin.

In a study conducted by Vijay Mohan et al[31] in 2014, "Out of total 61 strains of *S.aureus* isolated, 16(22.2%) were found to be Methicillin resistant; which were sensitive to Amikacin, Clindamycin, Vancomycin, Linezolid and Rifampin". Ameer Abbas et al[32]

in 2015 conducted study on prevalence and antibiogram of hospital and community acquired MRSA in Rajasthan. Of the 500 strains of *S.aureus* isolated from different clinical samples, 201 were MRSA (40.2%), withmajor sensitivity to Vancomycin and Linezolid. The study showed 16.38% resistance to Teicoplanin.

Sex-wise distribution:

Goyal A. et al [33] in 2013 conducted study which revealed 58% male preponderance below 20 years of age group. No resistance Vancomycin, Linezolid, Teicoplani.Fomda BA et al[34] in 2014 conducted study on nasal carriage of Methicillin resistant *Staphylococcus aureus* among healthy population of Kashmir, showing 53% malepreponderance among the age group of 21–30 years respectively. All the isolates were sensitive to Clindamycin, Vancomycin, Linezolid, Teicoplanin.

Sumit Kumar et al[35] in 2015 conducted a study on prevalence of MRSA in patients admitted in a tertiary care hospital of North India showing 55% male preponderance compared to females. Common age group affected was 21-40 years. Antibiotic susceptibility showed 32% resistance to Ciprofloxacin, 21% resistance to Amikacin, 45% resistance to Clindamycin. All the strains were sensitive to Vancomycin, Teicoplanin, Linezolid.

Phenotypic detection methods:

Karami S. et al[36] in 2011 conducted a study evaluation of five phenotypic tests for identification of of MRSA. Out of 294 isolates, MRSA was detected with specificity of 98.9%, 97.9% by Cefoxitin Disc Diffusion method, CHROMagar MRSA respectively. Priya et al[37] in 2011 conducted a study on detection of MRSA strains and susceptibility

patterns. PCR *mec*A was taken as the gold standard in this study. Out of 200 isolates, 70 were MRSA positive by *mec*A gene detection. These isolates were 100%, 99.2% found specific by Cefoxitin Disc Diffusion method and CHROMagar MRSA respectively. Comparison of Cefoxitin disc diffusion method and *mec*A for MRSA detection were correlated, which confirmed Cefoxitin as the surrogate marker for *mec*A gene. CHROMagar MRSA had an accuracy in detecting MRSA isolates.

Zaidi et al[38] in 2013 conducted a study on comparison of Chromogenic agar medium and Disc diffusion test for detection of HA-MRSA from patients. Out of 148 samples, 96 were culture positive for MRSA, 84.6% were detected specific by Cefoxitin disc and 100% by CHROMagar MRSA. Isolates positive by disc diffusion were confirmed by Chromogenic agar. CHROMagar MRSA generated positive results in lesser period of time in this study with higher sensitivity and specificity. Poojary et al[39] in 2015 conducted a study on rapid identification of MRSA using Chromogenic media compared with conventional methods. Out of 246 samples, 40(16.26%) were culture positive for MRSA, detected by CHROMagar MRSA and disc diffusion method. 83.7%, 93% specificities were observed with Cefoxitin disc diffusion and CHROMagar MRSA. Turn around time for CHROMagar was reduced compared to disc diffusion methods in the study, concluding CHROMagar as reliable test for the early identification of MRSA and to initiate decolonization measures.

Type of predominant sample:

Anupurba S et al[6] in 2013 conducted a study on MRSA. Out of549 strains of *S.aureus* isolated from different clinical specimen, 52.5% were isolated from pus

samples. 55% were found to be MRSA. Of the total isolates, 80% were found to be resistant to , Ciprofloxacin, Gentamicin, Penicillin and Tetracycline. Many strains were multidrug resistant.Uma Chaudhary et al[40] in 2012 conducted a study on comparative study of community and health care associated Methicillin resistant *Staphylococcus aureus* infections, where maximum isolates were from pus samples (43.2%) received from various departments.

In the study conducted by Bilal Ahmed Mir et al[41] in 2013 on antimicrobial susceptibility patterns and prevalence in MRSA and coagulase negative *Staphylococcus aureus* in a tertiary center, Jammu and Kashmir. MRSA were isolated in majority from pus samples received from various departments contributing to 52% of total samples.

Sensitivity pattern by disc diffusion:

Kunsang Ongmoo Bhutia et al[42] in 2012 conducted a study on occurrence and antimicrobial susceptibility of CA-MRSA, HA-MRSA in Sikkim, out of 38.65% MRSA strains isolated,maximum resistance of 10.5% was observed with Linezolid. All the isolates were sensitive to Vancomycin, Teicoplanin. 92% isolates were resistant to Cotrimoxazole, 97% resistant to Amoxicillin, 31% resistant to Ciprofloxacin. Hajera M et al[43] in 2014 conducted a study on antimicrobial patterns and prevalence and of MRSA from a tertiary center, in which 100% resistance was observed with Penicillin, Cefoxitin, 87% with Amoxicillin and Clavulanate combination, 4.2% with Clindamycin, 6.7% with Linezolid, 2% with Vancomycin, 1.6% with Teicoplanin respectively.

Apoorva Tripathi et al[44] in 2015 conducted a study on prevalence and antimicrobial susceptibility patterns of Methicillin resistant *Staphylococcus aureus* in

central India, with 100% sensitivity to Clindamycin, Vancomycin, Linezolid, Teicoplanin. Isolates were 100% resistant to Penicillin and Cefoxitin, 98% resistant to Amoxicillin, 47% to Cotrimoxazole, 56% to Ciprofloxacin respectively.

4.Materials and Methods

MATERIALS AND METHODS:

The study was conducted in the Department of Microbiology, Shri B.M Patil Medical College Hospital and Research center, Vijayapur. *S. aureus* isolated from all the clinical samples formed the material for study.Clinical samples like pus, urine, sputum, blood and other body fluids of patients attending Shri B M Patil Medical College and Hospital were selected for study.

Sample size :With 5% margin of error and at 95% level of confidence and prevalence rate of 40%, the calculated sample size n=383 using statistical formula

$$n=(1.96)^2 p(1-p)/d^2$$

Hence a minimum of 383 *S.aureus* were identified and antimicrobial susceptibility pattern studied for three years period

Stastistical analysis: Values were expressed in terms of Mean ± SD. Analysis ws done by using SPSS software version 16. $P \leq 0.05$ was considered statistically significant.

Inclusion criterion: Samples which yielded pure growth of *S. aureus* were included.

Exclusion criterion: Samples which did not yield *S. aureus* were excluded from the study.

Specimens were screened by preliminary Gram's stain and then inoculated on 10% sheep blood agar and MacConkey's agar. *S. aureus* were identified by conventional techniques. Antimicrobial susceptibility testing of the isolates was performed by Kirby Bauer disc diffusion method using following discs.penicillin-G (10 unit); cloxacillin (30µg); cephalexin (30µg); cefuroxime(30 µg); tetracycline (30µg) ; erythromycin

(15µg); gentamicin (10µg); ciprofloxacin (5µg); pefloxacin (5µg); Cefoperazone /salbactam(75 µg/ 30 µg); azithromycin(15µg); linezolid (15µg). Vancomycin(30µg); piperacillin/tazobactam(100µg/10 µg); amoxicillin/clavulanic acid (20 µg /10 µg). The data were recorded and analyzed at the completion of the study as per recommendations of the CLSI.[45]

Detection of MRSA:

- The Cefoxitin Disc Diffusion Test:

The Cefoxitin disc diffusion method was carried out on Mueller-Hinton agar by using a 30 µg cefoxitin disc. Inoculum was prepared and compared with 0.5 McFarland turbidity constant. Mueller-Hinton agar was inoculated and excess was removed. Cefoxitin 30mcg discs were applied with forceps and pressed gently to ensure even contact with the medium. The plates were incubated for 18 – 24 hours at 37°c. Interpretation was done using the Kirby-Bauer charts. An inhibition zone diameter of ≤ 21 mm was reported as methicillin resistant. [46]

- The Oxacillin Disk Diffusion Method:

The Oxacillin disk (1 µg) diffusion method was carried out on Mueller-Hinton agar which was supplemented with 4% NaCl to detect MRSA according to the CLSI guidelines.The isolates were considered as resistant when the diameter of inhibition was ≤10 mm. [47]

Genotypic detection of MRSA by PCR (mec A gene):[48-50]DNA Extraction Procedure was done by Modified Proteinase-K method.MRSA strains were amplified by

conventional PCR. Following set of PCR primers were used which were specific to Methicillin resistant *S.aureus.*[1]

Forward Primer : 5'- TGC TAT CCA CCC TCA AAC AGG -3'

Reverse Primer : 3'-AAC GTT GTA ACC ACC CCA AGA -5'

AMPLIQON RED 2X Mastermix was used which contain following reagents

Tris-HCL pH 8.5, $(NH_4)_2SO_4$, 3mM $MgCl_2$, 0.2% Tween 20, 0.4mM of each dNTP , 0.2 units/µl Ampliqon Taq DNA Polymerase

The PCR conditions were as follows

Initial denaturation (94^0 C, 5min), Denaturation (94^0 C, 1 min), Annealing(50^0 C, 1 min)

Extension (72^0 C, 2 min), Final extension(72°C for 5 min)

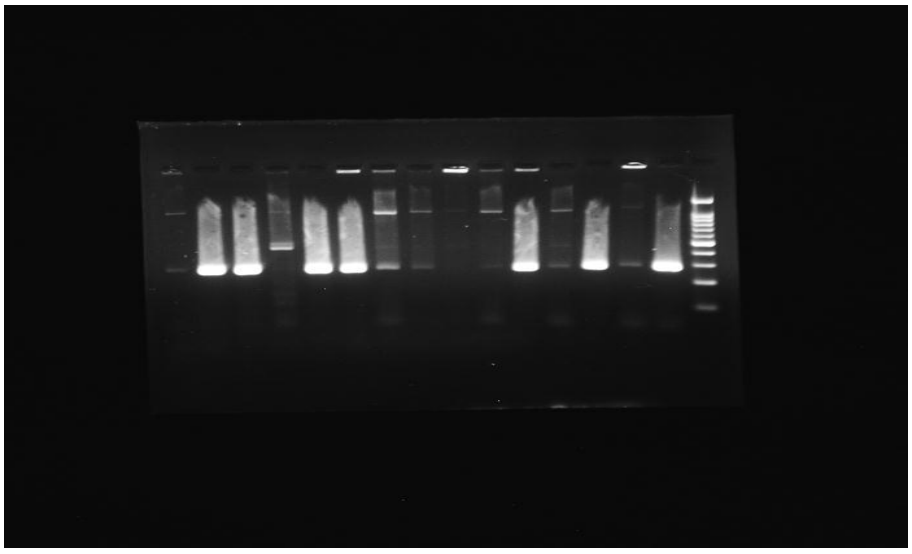
Reagents with their company names : PCR Master mix: Ampliqon Oligonucleotide Primers: Bioserve India pvt Ltd

Instruments:

Thermal cycler: Applied Biosystems, USA. Electrophoresis apparatus: Bio bee Tech, Bangalore. Gel Documentation system: Major Science, USA.

Interpretation:

- The PCR was carried out for MRSA strains with MRSA specific primer set. After PCR, the agarose gel electrophoresis was done where PCR amplified products were run on a 2% agarose gel.
- After running the electrophoresis, the amplified products will get separated on the gel according to the product size which was determined while choosing a primer.
- We had chosen a primer set which gives amplified product of size 280 base pair. So the well which gives DNA band of 280 base pair is considered positive, whereas the well which does not have any DNA band is indicated as negative.
- The size or the position of the DNA band can be known by running the DNA ladder simultaneously with each gel.



Results of *mecA* gene

Lane 1: Molecular weight marker

Lane 2: MRSA ATCC 43300

Lane 3: MSSA ATCC 25923

Lane 4, 6, 11,12,14 and 15: MRSA isolates from clinical samples(280 BP)

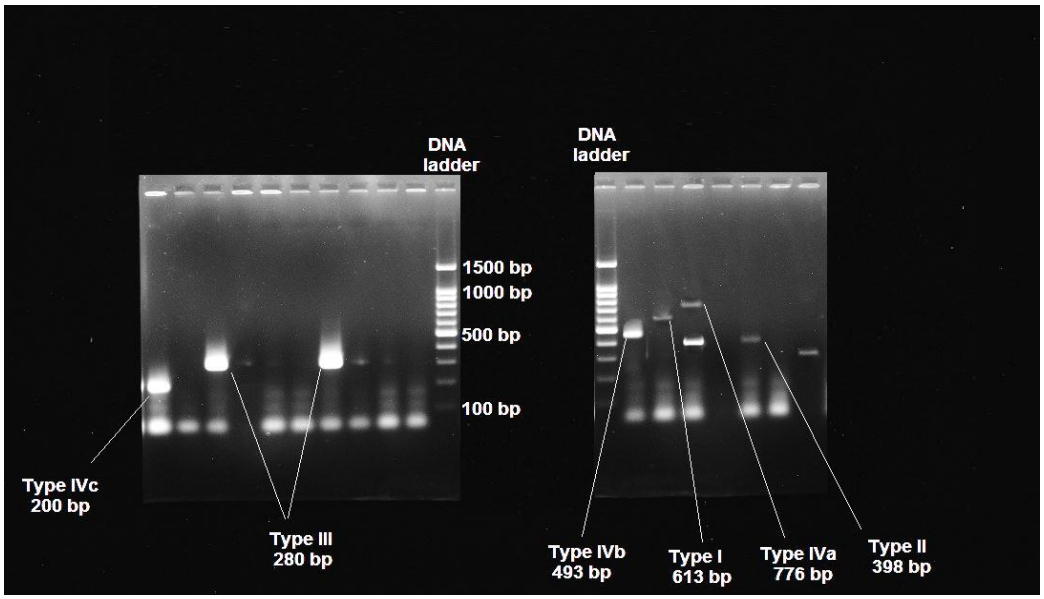
Lane 5,7-10,13,16: MSSA isolates from clinical sample

Multiplex PCR[48-52] was carried out for detection of SCCmec types, using following primers.

Table 1: SCCmec types and their primers.

Primer Name	Primer Sequence 5' --> 3'	Primer Length (bp)	Amplicon size in base pair
mecA F	TGCTATCCACCCTCAAACAGG	21	286
mecA R	AACGTTGTAACCACCCCAAGA	21	
Type I F	GCTTTAAAGAGTGTCGTTACAGG	23	613
Type I R	GTTCTCTCATAGTATGACGTCC	22	
Type II F	CGTTGAAGATGATGAAGCG	19	398
Type II R	CGAAATCAATGGTTAATGGACC	22	
Type III F	CCATATTGTGTACGATGCG	19	280
Type III R	CCTTAGTTGTCGTAACAGATCG	22	
Type IVa F	GCCTTATTCGAAGAAACCG	19	776
Type IVa R	CTACTCTTCTGAAAAGCGTCG	21	
Type IVb F	TCTGGAATTACTTCAGCTGC	20	493
Type IVbR	AAACAATATTGCTCTCCCTC	20	
Type IVc F	ACAATATTTGTATTATCGGAGAGC	24	200
Type IVc R	TTGGTATGAGGTATTGCTGG	20	
Type IVd F	CTCAAAATACGGACCCCAATACA	23	881
Type IVdR	TGCTCCAGTAATTGCTAAAG	20	
Type V F	GAACATTGTTACTTAAATGAGCG	23	325
Type V R	TGAAAGTTGTACCCTTGACACC	22	

SCCmec typing in MRSA isolates.



5. Results

RESULTS:

Table 2: Distribution of *S. aureus* according to age.

AGE (YRS)	N	%
<1	4	1.0
1-10	48	12.5
11-20	33	8.6
21-30	71	18.5
31-40	46	12.0
41-50	63	16.4
51-60	55	14.4
>80	63	16.4
Total	383	100.0

MEAN±SD=38.4±21.7

Figure 1: Distribution of *S. aureus* according to age.

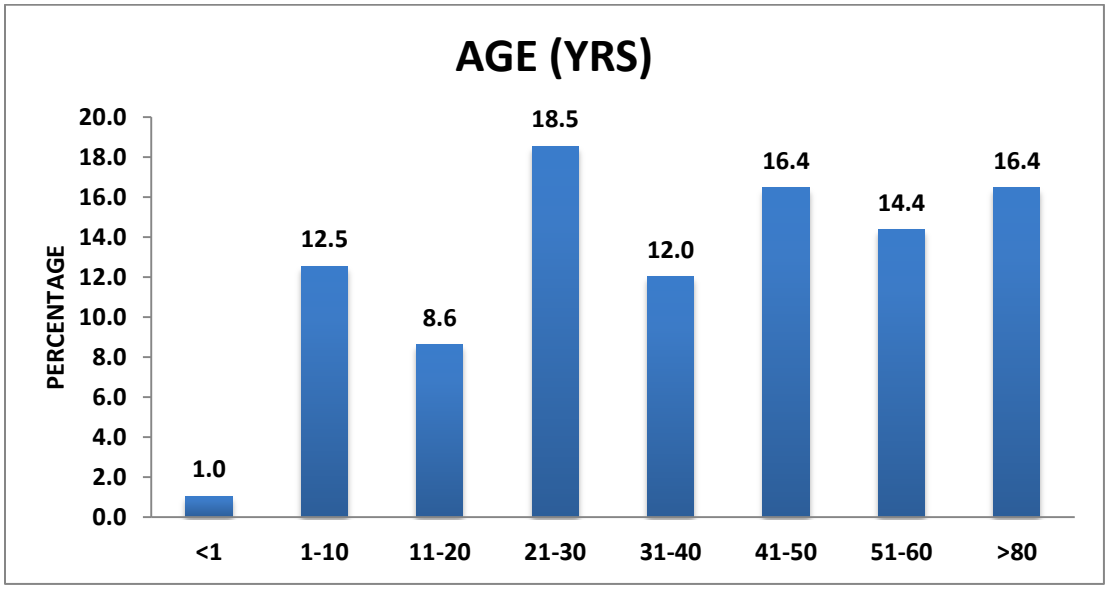


Table 3: Distribution of *S. aureus* according to sex.

SEX	N	%
Male	237	61.9
Female	146	38.1
Total	383	100.0

Figure 2: Distribution of *S. aureus* according to sex.

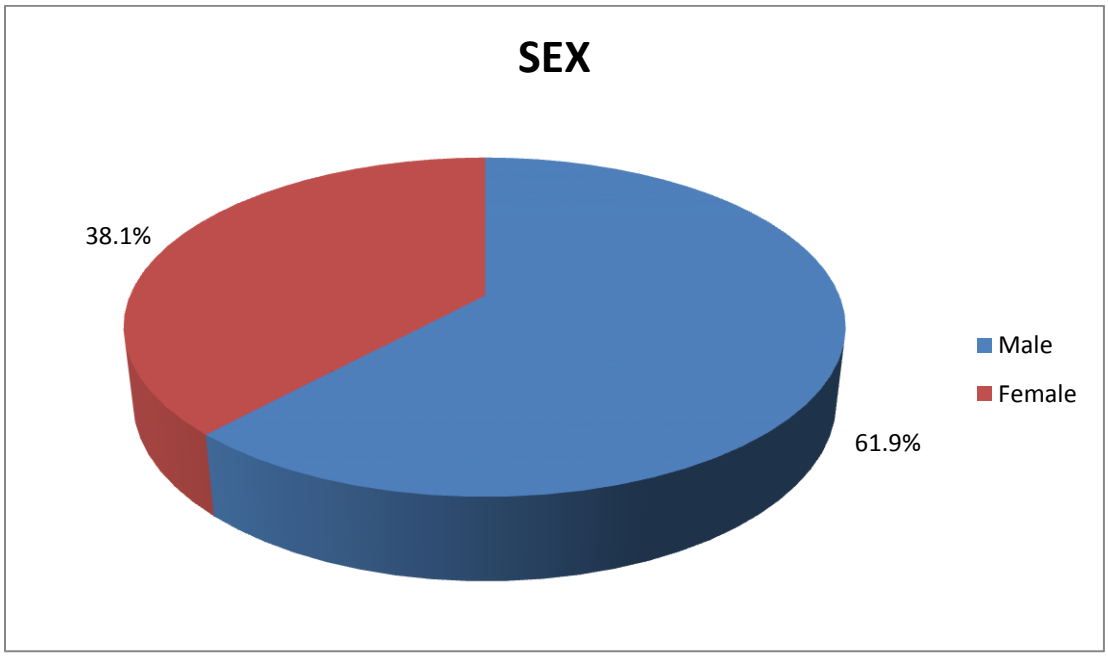


Table 4: Association Of Age WithSex Among*S. aureus.*

AGE (YRS)	Male		Female		p value
	N	%	N	%	
<1	2	0.8	2	1.4	0.013*
1-10	33	13.9	15	10.3	
11-20	16	6.8	17	11.6	
21-30	34	14.3	37	25.3	
31-40	24	10.1	22	15.1	
41-50	46	19.4	17	11.6	
51-60	39	16.5	16	11.0	
>80	43	18.1	20	13.7	
Total	237	100.0	146	100.0	

Figure 3 : Association Of Age With Sex Among *S. aureus.*

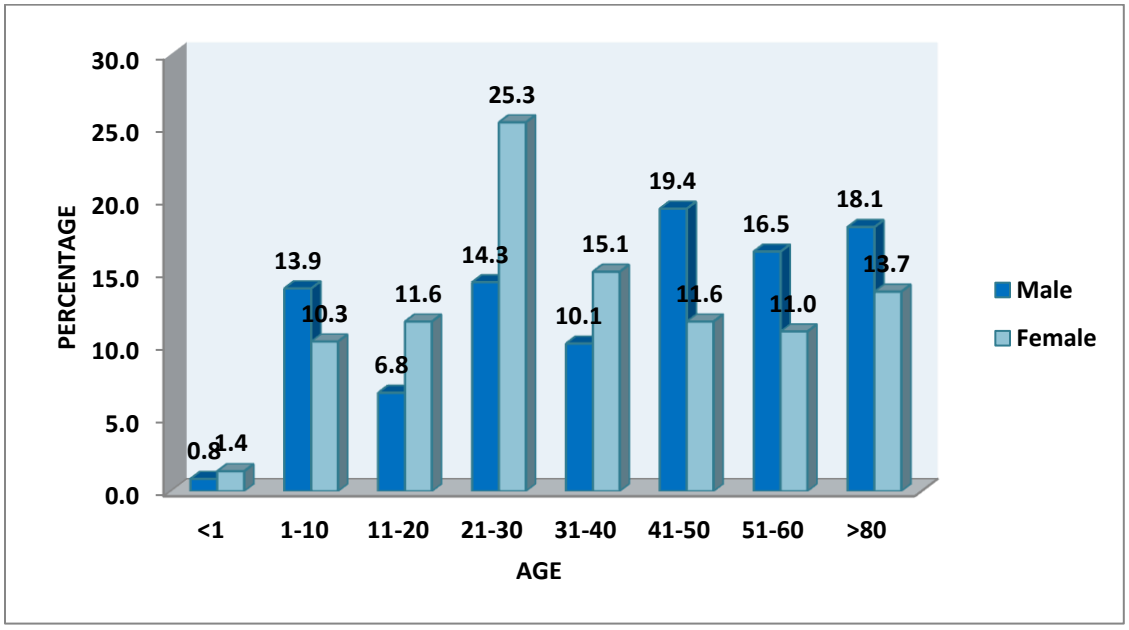


Table 5: Ward wise Distribution of *S. aureus.*

WARD	N	%
IPD	281	73.4
OPD	102	26.6
Total	383	100

Figure 4: Ward wise Distribution of *S. aureus.*

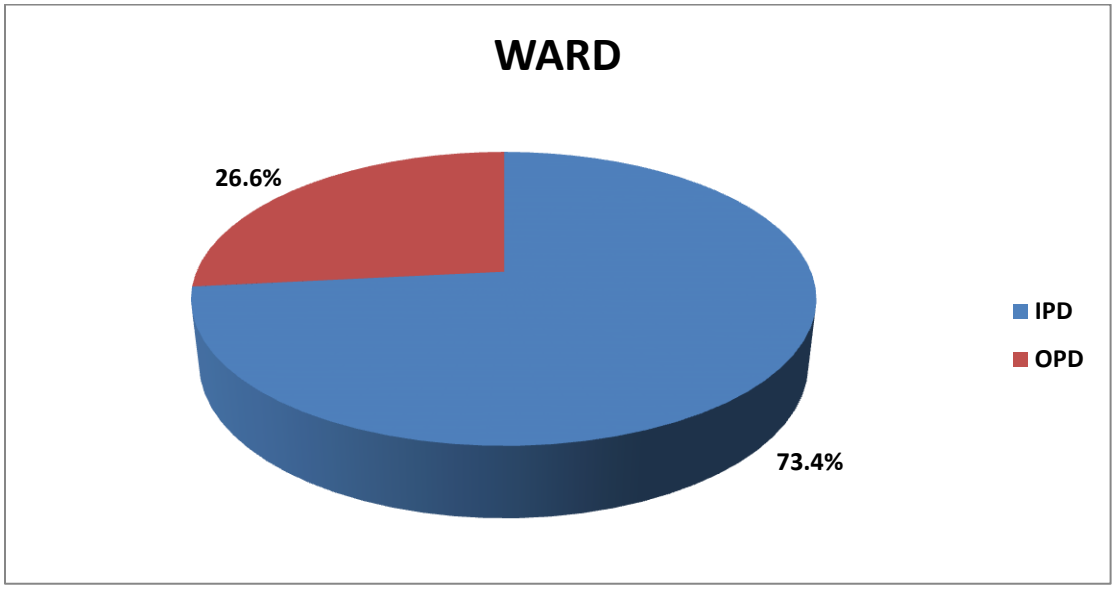


Table 6: Specimen wise distribution of *S. aureus.*

Specimen	N	%
Blood	8	2.1
CSF	3	0.8
Ear swab/discharge	30	7.8
Pus	304	79.4
Sputum	14	3.7
Throat swab	6	1.6
Urine	15	3.9
Vaginal swab	3	0.8
Total	383	100

Figure 5: Specimen wise distribution of *S. aureus.*

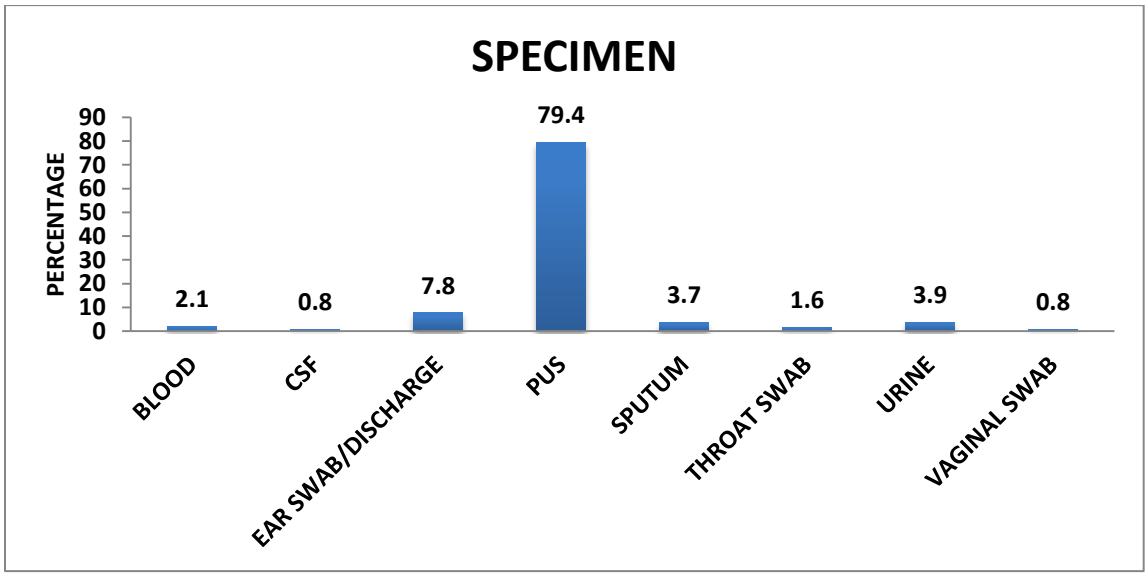


Table 7: Distribution of *S. aureus* according to department

Department	N	%
Ent	49	12.8
Medicine	29	7.6
Obg	22	5.7
Ortho	25	6.5
Pediatrics	11	2.9
Skin	25	6.5
Surgery	209	54.6
Urology	13	3.4
Total	383	100

Figure 6: Distribution of*S. aureus* according to department

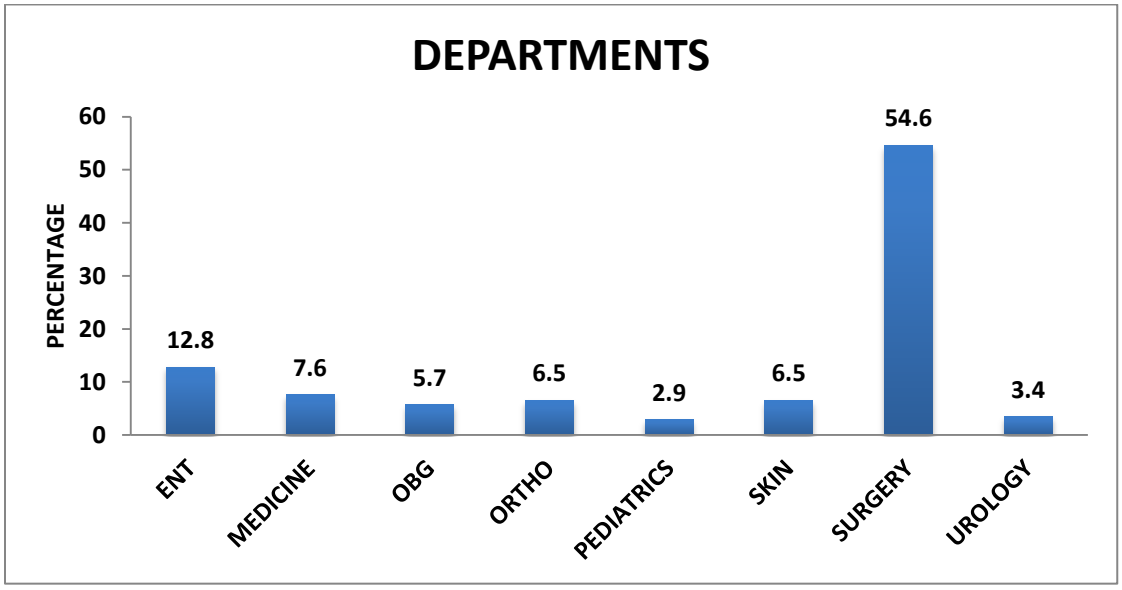


Table 8: Distribution of MRSA and MSSA

S. aureus	N	%
MSSA	197	51.4
MRSA	186	48.6
Total	383	100

Figure 7: Distribution of MRSA and MSSA

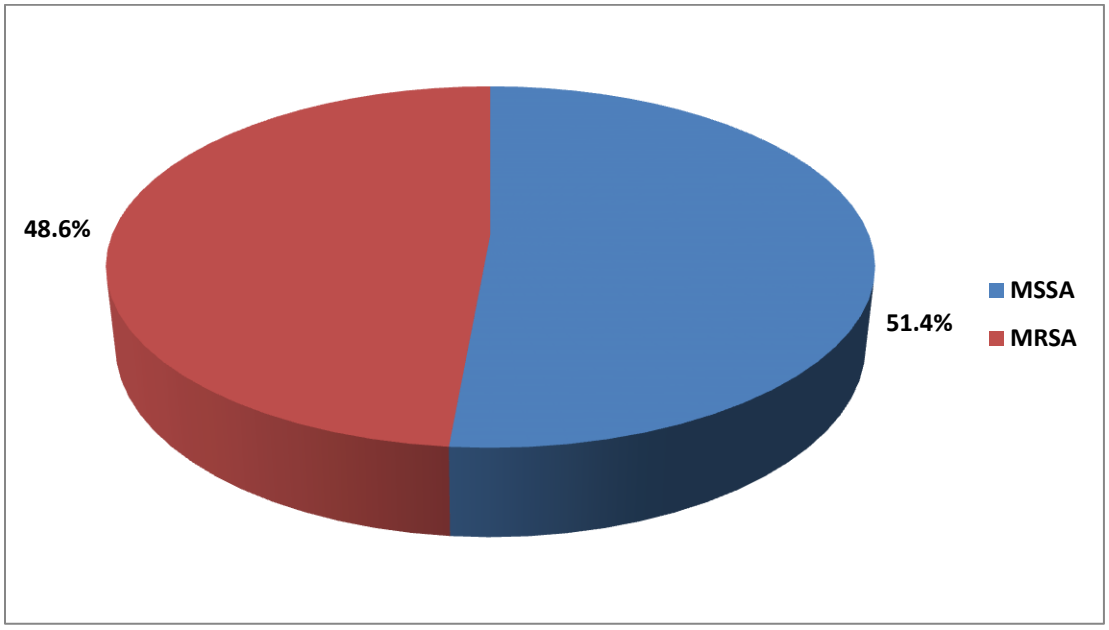


Table 9: Distribution of MRSA and MSSA according to age

AGE (YRS)	MSSA		MRSA		Total	p value
	N	%	N	%		
<1	4	2.0	0	0.0	4	0.273
1-10	24	12.2	24	12.9	48	
11-20	16	8.1	17	9.1	33	
21-30	35	17.8	36	19.4	71	
31-40	24	12.2	22	11.8	46	
41-50	35	17.8	28	15.1	63	
51-60	33	16.8	22	11.8	55	
>80	26	13.2	37	19.9	63	
Total	197	100.0	186	100.0	383	

Figure 8: Distribution of MRSA and MSSA according to age

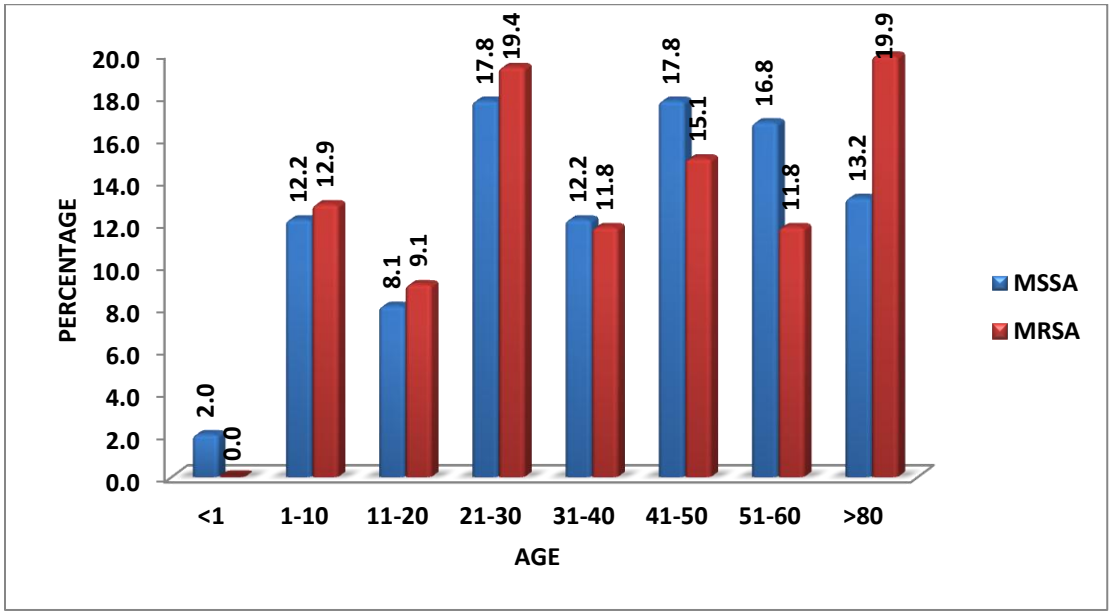


Table 10: Distribution of MRSA and MSSA according to sex

SEX	MSSA		MRSA		Total	p value
	N	%	N	%		
MALE	116	58.8	121	65.1	237	0.214
FEMALE	81	41.2	65	34.9	146	
Total	197	100	186	100	383	

Figure 9: Distribution of MRSA and MSSA according to sex

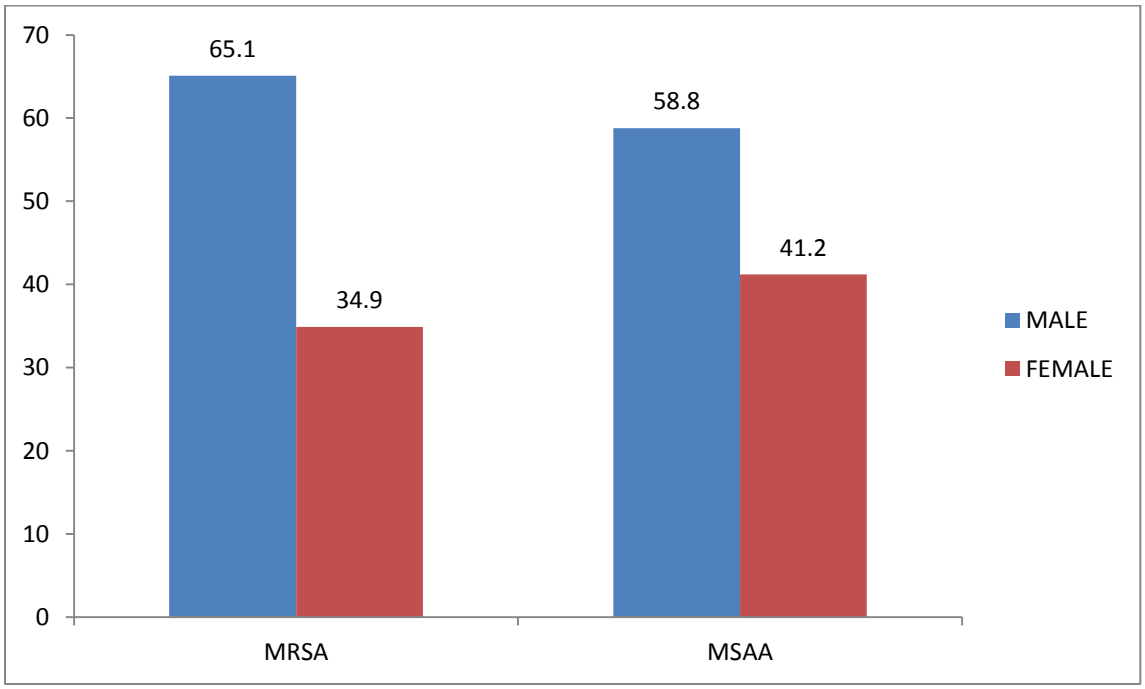


Table 11: Ward wise distribution of MRSA and MSSA .

WARD	MSSA		MRSA		Total	p value
	N	%	N	%		
IPD	144	73.1	137	73.6	281	0.901
OPD	53	26.9	49	26.4	102	
Total	197	100	186	100	383	

Figure 10: Ward wise distribution of MRSA and MSSA .

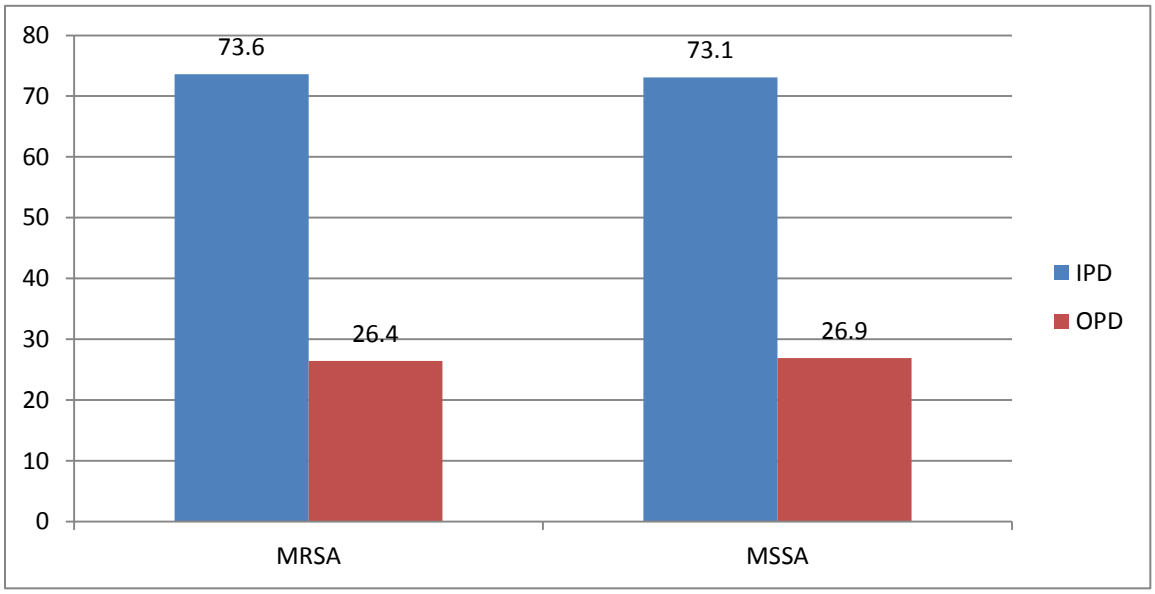


Table 12: Distribution of MRSA and MSSA according to department

Department	MSSA		MRSA		Total	p value
	N	%	N	%		
Ent	23	11.7	26	14.0	49	0.089
Medicine	18	9.1	11	5.9	29	
Obg	17	8.6	5	2.7	22	
Ortho	14	7.1	11	5.9	25	
Pediatrics	5	2.5	6	3.2	11	
Skin	13	6.6	12	6.5	25	
Surgery	104	52.8	105	56.5	209	
Urology	3	1.5	10	5.4	13	
Total	197	100.0	186	100.0	383	

Figure11: Distribution of MRSA and MSSA according to department

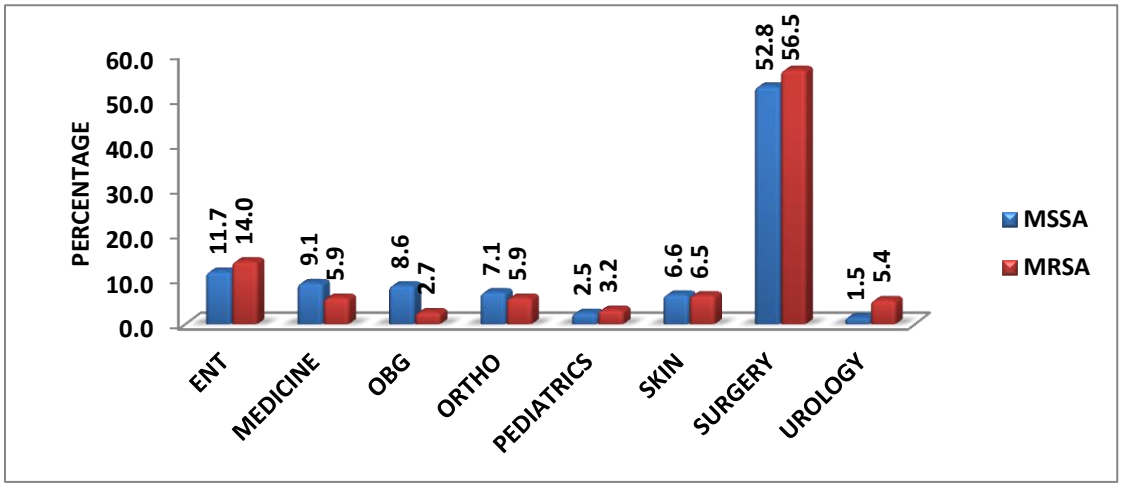


Table 13 :Specimen wise distribution of MRSA and MSSA .

SPECIMEN	MSSA		MRSA		Total	p value
	N	%	N	%		
BLOOD	2	1.0	6	3.2	8	0.329
CSF	3	1.5	0	0.0	3	
EAR SWAB/ DISCHARGE	13	6.6	17	9.1	30	
PUS	162	82.2	142	76.3	304	
SPUTUM	8	4.1	6	3.2	14	
THROAT SWAB	2	1.0	4	2.2	6	
URINE	5	2.5	10	5.4	15	
VAGINAL SWAB	2	1.0	1	0.5	3	
Total	197	100.0	186	100.0	383	

Figure 12 :Specimen wise distribution of MRSA and MSSA .

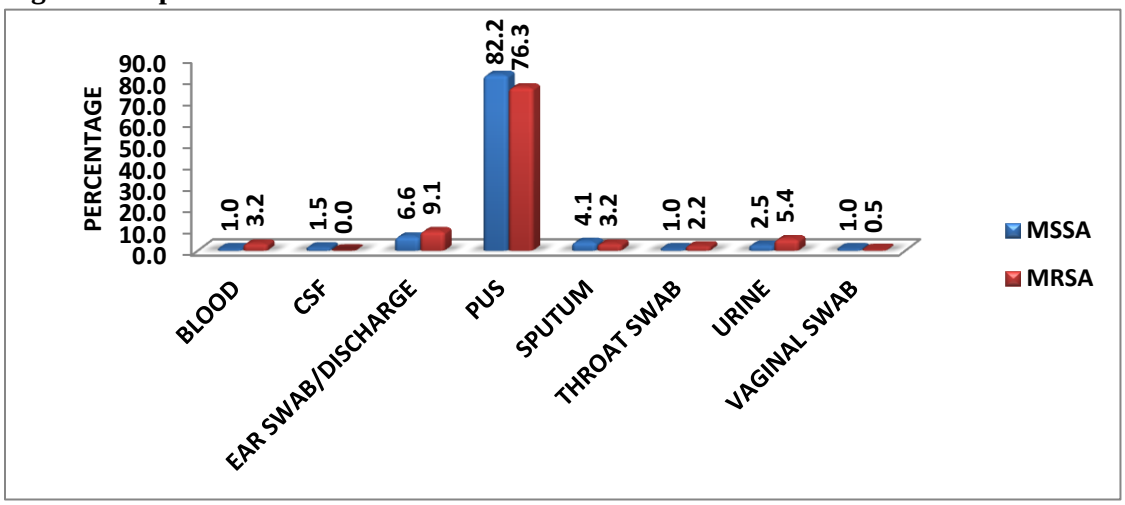


Table 14: Results of different methods for identification of MRSA

Total no of isolates=383
MRSA isolates detected by PCR (mec A gene) =186(gold std)
MRSA isolates detected by Oxacillin disc =148
MRSA isolates detected by cefoxitin disc =178

Table 15: Comparative results of phenotypic methods with PCR.

TEST METHODS	MRSA isolates detected	Sensitivity	Specificity	PPV	NPV	Accuracy
Oxacillin	148	79.6%	94.9%	93.7	83.1	87.5%
Cefoxitin	178	95.7%	100.0%	100.0	96.1	97.9%
PCR	186	100.0%	100.0%	100.0	100.0	100.0%

Figure 13: Comparative results of phenotypic methods with PCR

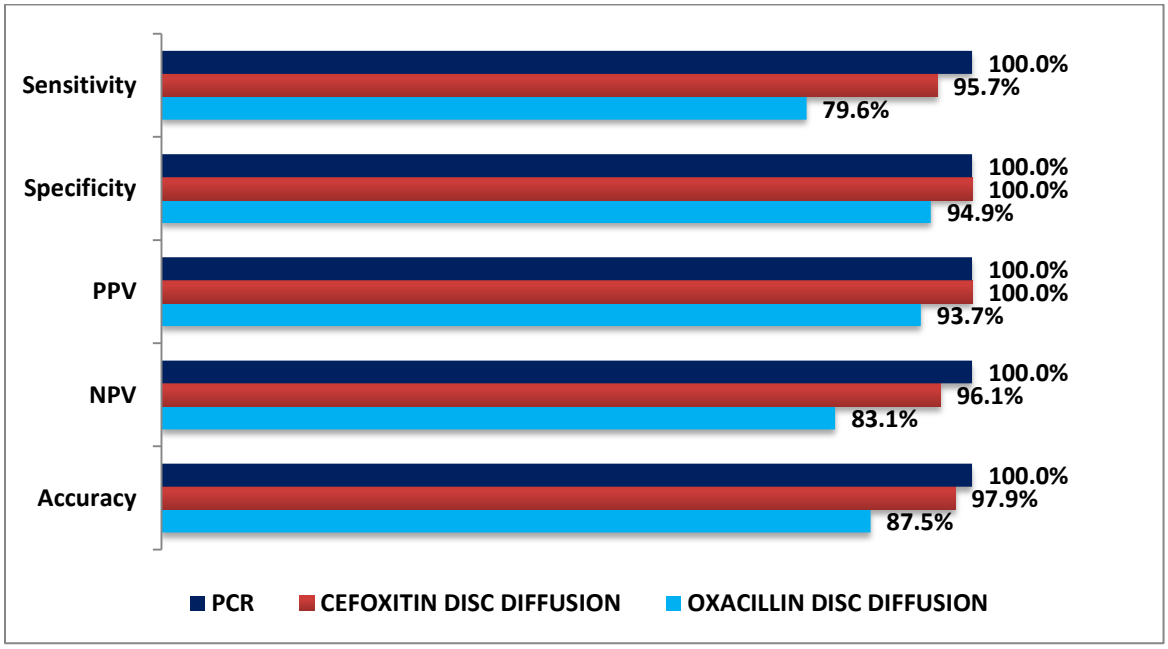


Table 16: Antibiotic susceptibility pattern among MSSA isolates

Antibiotic	MSSA (N=197)			
	SENSITIVE		RESISTANT	
	N	%	N	%
PENICILLIN-G	18	9.1	179	90.9
EYTHROMYCIN	87	44.2	110	55.8
TETRACYCLINE	176	89.3	21	10.7
CEPHALEXIN	109	55.3	88	44.7
CLOXACILLIN	91	48.9	95	51.1
PEFLOXACIN	50	25.4	147	74.6
PIPERACILLIN/TAZOBACTAM	147	79.0	39	21.0
CEFOPERAZONE /SULBACTAM	136	69.0	61	31.0
GENTAMICIN	151	76.6	46	23.4
CIPROFLOXACIN	47	25.3	139	74.7
AMOXICILLIN/CLAVULANIC ACID	69	35.0	128	65.0
CEFUROXIME	128	65.0	69	35.0
AZITHROMYCIN	118	59.9	79	40.1
VANCOMYCIN	163	87.6	23	12.4
LINEZOLID	172	92.5	14	7.5

Table 17: Antibiotic susceptibility pattern among MRSA isolates

Antibiotic	MRSA (N=186)			
	SENSITIVE		RESISTANT	
	N	%	N	%
PENICILLIN-G	7	3.8	179	96.2
EYTHROMYCIN	67	36.0	119	64.0
TETRACYCLINE	158	84.9	28	15.1
CEPHALEXIN	61	32.8	125	67.2
CLOXACILLIN	98	49.7	99	50.3
PEFLOXACIN	34	18.3	152	81.7
PIPERACILLIN/TAZOBACTAM	152	77.2	45	22.8
CEFOPERAZONE /SULBACTAM	122	65.6	64	34.4
GENTAMICIN	124	66.7	62	33.3
CIPROFLOXACIN	47	23.9	150	76.1
AMOXICILLIN/CLAVULANIC ACID	45	24.2	141	75.8
CEFUROXIME	109	58.6	77	41.4
AZITHROMYCIN	81	43.5	105	56.5
VANCOMYCIN	166	84.3	31	15.7
LINEZOLID	176	89.3	21	10.7

Table 18: Comparison of resistance pattern.

Antibiotic susceptibility pattern	MSSA (N=197)		MRSA (N=186)		p value
	R	%	R	%	
PENICILLIN-G	179	90.9	179	96.2	0.033*
EYTHROMYCIN	110	55.8	119	64.0	0.106
TETRACYCLINE	21	10.7	28	15.1	0.199
CEPHALEXIN	88	44.7	125	67.2	0.001*
CLOXACILLIN	95	48.2	99	53.2	0.883
PEFLOXACIN	147	74.6	152	81.7	0.114
PIPERACILLIN/TAZOBACTAM	39	19.8	45	24.2	0.652
CEFOPERAZONE /SULBACTAM	61	31.0	64	34.4	0.485
GENTAMICIN	46	23.4	62	33.3	0.032*
CIPROFLOXACIN	139	70.6	150	80.6	0.732
AMOXICILLIN/CLAVULANATE	128	65.0	141	75.8	0.031*
CEFUROXIME	69	35.0	77	41.4	0.215
AZITHROMYCIN	79	40.1	105	56.5	0.002*
VANCOMYCIN	23	11.7	31	16.7	0.339
LINEZOLID	14	7.1	21	11.3	0.284

Note: * significant at 5% level of significance ($p<0.05$)

Table 19: MRSA resistance pattern according to departments

	ENT		MEDICINE		OBG		UROLOGY		PEDIATRICS		SKIN		SURGERY		ORTHO	
	N (26)	**%**	**N (11)**	**%**	**N (5)**	**%**	**N(10)**	**%**	**N(6)**	**%**	**N(12)**	**%**	**N(105)**	**%**	**N(11)**	**%**
P	**25**	**96.2**	**11**	**100.0**	5	100.0	8	80.0	6	100.0	12	100.0	101	96.2	11	100.0
E	16	61.5	6	54.5	3	60.0	7	70.0	2	33.3	9	75.0	65	61.9	7	63.6
T	4	15.4	2	18.2	0	0.0	3	30.0	0	0.0	3	25.0	14	13.3	0	0.0
CEP	15	57.7	9	81.8	2	40.0	8	80.0	5	83.3	5	41.7	73	69.5	6	54.5
CLO	13	50.0	4	36.4	2	40.0	9	90.0	1	16.7	5	41.7	55	52.4	5	45.5
PEF	21	80.8	10	90.9	2	40.0	9	90.0	4	66.7	7	58.3	85	81.0	11	100.0
PT	5	19.2	2	18.2	0	0.0	4	40.0	2	33.3	2	16.7	20	19.0	2	18.2
CS	8	30.8	4	36.4	1	20.0	2	20.0	4	66.7	2	16.7	38	36.2	2	18.2
G	9	34.6	4	36.4	1	20.0	2	20.0	0	0.0	3	25.0	41	39.0	1	9.1
CIP	20	76.9	9	81.8	2	40.0	8	80.0	4	66.7	8	66.7	79	75.2	7	63.6
AC	18	69.2	9	81.8	4	80.0	8	80.0	5	83.3	9	75.0	75	71.4	6	54.5
CEF	7	26.9	8	72.7	2	40.0	5	50.0	2	33.3	4	33.3	43	41.0	4	36.4
AZ	11	42.3	6	54.5	3	60.0	8	80.0	3	50.0	9	75.0	55	52.4	6	54.5
V	4	15.4	1	9.1	0	0.0	**3**	**30.0**	1	16.7	3	25.0	10	9.5	1	9.1
L	**1**	**3.8**	**0**	**0.0**	0	0.0	**3**	**30.0**	1	16.7	2	16.7	6	5.7	1	9.1

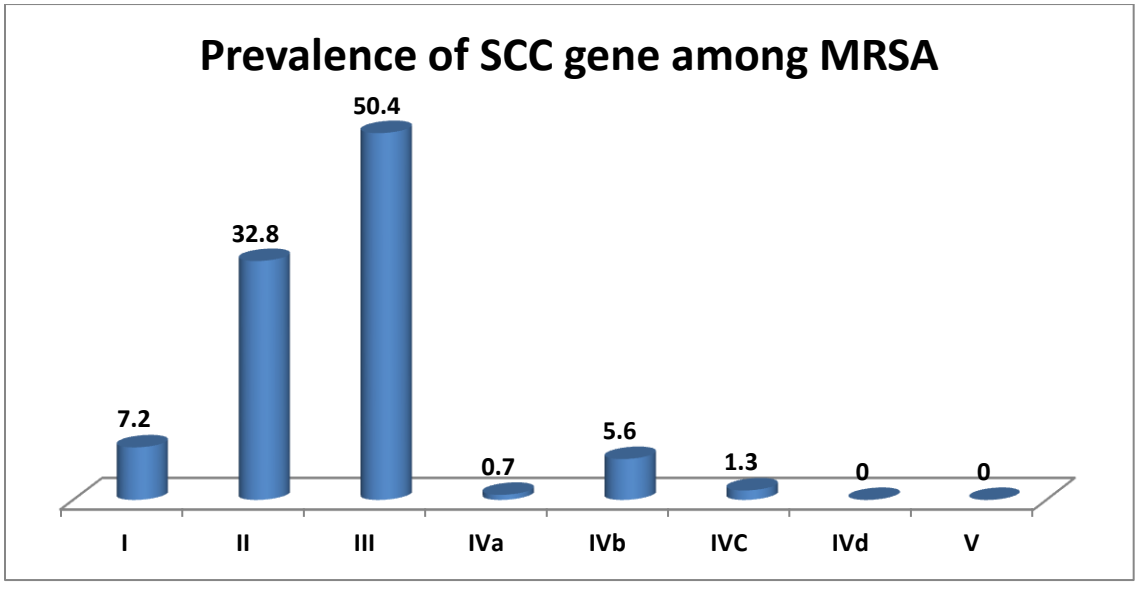
Table 20: MRSA resistance pattern according to departments by specimen

SPECIMEN	DEPARTMENT															
	ENT		MEDICINE		OBG		ORTHO		PEDIATRICS		SKIN		SURGERY		UROLOGY	
	N (26)	%	N (11)	%	N (5)	%	N (11)	%	N (6)	%	N (12)	%	N (105)	%	N (10)	%
BLOOD	0	0.0	1	9.1	0	0.0	0	0.0	1	16.7	0	0.0	4	3.8	0	0.0
CSF	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
EAR SWAB /DISCHARGE	16	61.5	0	0.0	0	0.0	0	0.0	1	16.7	0	0.0	0	0.0	0	0.0
PUS	8	30.8	5	45.5	3	60.0	10	90.9	1	16.7	11	91.7	98	93.3	6	60.0
SPUTUM	1	3.8	4	36.4	0	0.0	1	9.1	0	0.0	0	0.0	0	0.0	0	0.0
THROAT SWAB	1	3.8	0	0.0	0	0.0	0	0.0	3	50.0	0	0.0	0	0.0	0	0.0
URINE	0	0.0	1	9.1	1	20.0	0	0.0	0	0.0	1	8.3	3	2.9	4	40.0
VAGINAL SWAB	0	0.0	0	0.0	1	20.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Table 21: Prevalence of SCC gene among MRSA isolates

SCC type	Numbers	Prevalence in %
I	14	7.2
II	59	32.8
III	94	50.4
Iva	1	0.7
IVb	10	5.6
IVC	2	1.3
IVd	0	0
V	0	0

Figure 14: Prevalence of SCC gene among MRSA isolates



6. Discussion

Discussion:

MRSA is a major nosocomial pathogen causing significant morbidity and mortality. Predominant mode of transmission being person to person, important reservoirs of MRSA in hospital or institutions are, infected or colonized patients and transient carriage on the hands of health care personnel[30]. MRSA had been recognized late and emerged as a problem in the 80's and in the 90's.[30]

Table 22: MRSA Prevalence patterns in various studies.

Study	Prevalence
K Rajaduraipandi et al [30](2006)	31.1%
Bandara et al [53](2012)	47%
Virendra et al [54](2014)	61.4
Eshani et al [55](2014)	40%
Present Study (2018)	48.6%

As shown in the Table 22 , prevalence of MRSA in the present study was 48.6% which correlates with the study of Bandara et al[53] (47%). Study of Eshani et al[55] (40%) was close to the present study. However some western countries have reported decline in MRSA rates, specially in UK which was achieved due to nationwide intervention based on audit and quality improvement.

Table 23: Age Wise distribution of MRSA isolates in various studies.

Year	Study	Age in years	Percentage
2006	Huang et al[56]	21 – 30	31%
2015	Sumit et al [35]	21 – 30	30.90%
2015	Tahira et al [57]	21 – 30	50%
2018	Present study	21 – 30	19.4%

(Age wise distribution of MRSA isolates in the present study analysed in table 23). As shown in Table 23, in the present study, 19% of MRSA isolates were observed in the age group of 21 – 30 years, which correlates with the study of Sumit et al[35](30.9%) and Huang et al[57](31%) respectively. The highest prevalence rates of MRSA infections were observed in the young and elderly. The association between MRSA and younger age group, likely to reflect acquisition in the community.

Table 24: Sex-Wise distribution of MRSA isolates in various studies.

Study	Predominant sex in %
Goyal et al[18] (2013)	Male (58%)
Fomda et al[19] (2014)	Male (53%)
Sumit et al [35](2015)	Male (55%)
Present study (2018)	Male (65%)

(Sex wise distribution of MRSA isolates analysed in table 24). As shown in table 13, in the present study, MRSA was predominantly isolated from males(65%) which correlated with study of Sumit et al[35] (male 55%) and Fomda et al[19] (male 53%).

Table 25 :Department wise distribution of MRSA isolates invarious studies.

Study	Ward	Percentage
Lahari et al[58] (2009)	Surgery	47%
V. Pai et al[59] (2010)	Surgery	71%
Virendra et al[54] (2014)	Surgery	61.40%
Present study (2018)	Surgery	54.50%

In the current study more number of the organisms were from surgical patients and which correlates well with suppurative nature of Staphylococcal infections. Similar results were revealed by various studies as shown in table. The reasons for higher proportion of MRSA cases in surgery department may be related to the poor environmental cleaning, operation theatre surveillance and infection control measures of hospitals in Indian setup and also because of high usage of antibiotics as noted by Swanston et al[2]. In the present study, MRSA isolates (76%) were from pus samples, which coincides with the study of Khadri et al[60] [Pus, 55%].

Table 26: Sensitivity and specificity of Cefoxitin Disc Diffusion method for detection of MRSA.

Authors	Sensitivity(%)	Specificity(%)
Karami et al[36] (2011)	100	98.9
Priya et al[37] (2011)	98.5	100
Zaidi et al[38] (2013)	94	84.6
Present study (2018)	95	100

Detection of mecA gene is considered the gold standard for MRSA confirmation. In our study, the mecA gene PCR detected 186 isolates as MRSA and the 197 isolates as MSSA.

Recent studies including our s indicate that cefoxitin disc diffusion test is better than most of the phenotypic methods like oxacillin disc diffusion and oxacillin screen agar testing and is now an accepted method for the detection of MRSA by many reference groups including CLSI. The accurate and early determination of methicillin resistance is of key importance in the prognosis of infections caused by S. aureus.[5] This higher sensitivity to cefoxitin can be explained by the increased expression of the mecA-encoded protein PBP2a, cefoxitin being an inducer of the mecA gene.[5] Our study reveals that cefoxitin disc is better than oxacillin disc for the detection of methicillin resistance. Results of cefoxitin disc diffusion test is as good as PCR used for mecA gene, and thus the cefoxitin can be used for identification of MRSA and the test can be used as cost effective method when compared to PCR for detection of MRSA .

Antibiotic suseptibility pattren of the MRSA isolates:

Antibiotic susceptibility pattern revealed a high resistance to routinely used antibiotics . Resistance to quinolones i,e. ciprofloxacin and pefloxacin were high in this study. This is comparable to the study done by Sanjana et al[61]., in Nepal. Resistance to cephalexin (67%) was also much higher in this study. This is consistent with the study carried out by Sanjana et al.,[61] who reported the similar resistant rate to cephalexin. Vidhani *et al*. found that there was a marked difference between sensitivity pattern of MRSA and MSSA isolates. Majumder et al.[62] also revealed that resistance to various antibiotics with methicillin resistant strains was higher in comparison to methicillin-sensitive isolates. Factors responsible for drug resistance in MRSA are as follows. Antibiotics are available without prescription at drug stores or even at general stores and injudiciously used in communities, animal husbandries, and fisheries and use of allopathic drugs by traditional practitioners. [2]

Multidrug resistance among MRSA:

Multidrug resistance is defined as resistance of a MRSA strain towards three or more antibiotics at a given point of time. In the USA, some workers have reported multi-drug resistance rates of 65.7% MRSA isolates. In Nigerian women, a total of 43 *S. aureus out of 60* were found to be multidrug resistant. We found a high percentage of multidrug-resistant MRSA (76.8%) in our hospital. If we look into the Indian literature, it seems the burden of multi drug resistant-MRSA is increasing over time: for instance, 23.2% was reported by Majumder and colleagues[62], 32% by Anupurba and colleagues[6] and 63.6% by Rajaduraipandi and colleagues.[30] The lesson is clear: MRSA surveillance and strict drug policy are of paramount importance, or else the threat will increase.

SCCmec typing:

This is the first reports of the prevalent genotypes of MRSA in Vijayapur. This study shows that the prevalent MRSA types in Vijayapur are *SCCmec-III* and *SCCmec-II*.Of 186 MRSA isolates tested, 50% were SCCmec type III ,33% were SCCmec type II. These results are similar to those from most Asian countries[63-66]. In addition to the mecA gene, SCCmec type III contains genes encoding resistance to several non-b-lactam antibiotic classes, such as macrolides and tetracyclines. These resistance genes are found on transposons and plasmids integrated into the SCCmec element. Five different SCCmec types have been characterised in MRSA. Two distinct SCCmec types of MRSA strains have been identified in Asia. SCCmec type II is most common distributed in Japan and Korea whereas SCCmec type III is predominant in some other Asian countries such as Saudi Arabia, India, Sri Lanka, Singapore, China, Thailand[63-67] (Chongtrakool et al. Ko et al. 1999). In Europe, varied SCCmec types have distributed and dominated in different countries. The SCCmec type I have been identified especially in Croatia, and Switzerland . The SCCmec type IV has been reported from Spain , Portugal, Germany.In the US, SCCmec type II and IV have been observed most common types.[68]

7.Summary and Conclusion

Summary and Conclusion:

- Our study observed that the prevalence of MRSA as a whole did not vary significantly by gender but were more frequent among male patients,
- The predominant age group commonly affected was 21 – 30 years (19%).
- In the present study, majority of MRSA isolates were from pus samples (76%).
- Higher rate of MRSA isolates were from department of Surgery (56.5%).
- Linezolid (89% sensitive) was the most effective agent against MRSA isolates followed by tetracycline (86%) and Vancomycin (83%).
- Anti-biograms of MRSA isolates revealed high level of resistance(more than 75%) to penicillin, pefloxacin ,gentamicin and amoxicillin/clavulanic acid .
- Results of cefoxitin disc diffusion test was as good as PCR for *mecA* gene, and thus the cefoxitin disk diffusion method is very suitable for detection of MRSA and the test can be an alternative to PCR for detection of MRSA in resource constraint settings.
- The current study revealed the prevalence of MRSA in the tertiary hospital in this part of India is very high(48.6%.). Therefore, it is necessary to choose suitable antibiotics with respect to their antimicrobial profiles for treating the infections .
- We found a higher number of multidrug-resistant MRSA in our hospital. If we look into the Indian setting , it seems the burden drug resistant-MRSA is increasing over time.

- This is the first reports of the prevalent genotypes of MRSA in our hospital settings in Vijayapur. This study shows that the prevalent MRSA types in Vijayapur are *SCCmec-III* and *SCCmec-II.*

Study limitations:

- Molecular diagnosis was restricted to MRSA cases .
- Complete gene sequencing.

Future Prospective: Previously unknown genotypes of the SCCmec have been identified. Future study of these genotypes may reveal various features that enable these isolates to succeed in this setting.

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9.Annexure

Papers presented in conferences:

BANGALORE MEDICAL COLLEGE & RESEARCH INSTITUTE

DEPARTMENT OF MICROBIOLOGY

K.R. Road, Fort, Bengaluru – 560002.

INDIAN ASSOCIATION OF MEDICAL MICROBIOLOGISTS (KC)

KC-MICROCON 2016

Certificate

This is to certify that Dr./Mr./Ms. Dr. Basavaraj C Metri

Bearing Reg. No. 64274 Registered with Karnataka Medical Council Address BLDEU, Vijayapura

has participated as delegate / ~~Chairperson~~ / presented a scientific paper (~~Oral~~/Poster) in the 20th Annual Conference of IAMM (KC) with the theme 'Vaccine Updates' conducted at Bengaluru on 20th February, 2016.

Karnataka Medical Council has granted 2 credit hours vide letter KMC/CME/075/2016 Dated 23.01.2016

Zonal Chairman
Karnataka Medical Council - CME
Bengaluru

Dr. Ambica R.
Organising Secretary
Department of Microbiology
BMCRI, Bengaluru

Dr. Nagarathnamma T.
Organising Chairperson
Department of Microbiology
BMCRI, Bengaluru
President, IAMM (KC)

Dr. Devadass P.K.
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BMCRI, Bengaluru

MICROCON KC 2017

INDIAN ASSOCIATION OF MEDICAL MICROBIOLOGISTS (KC)

DEPARTMENT OF MICROBIOLOGY,

Vijayanagar Institute of Medical Sciences, Ballari

Certificate

This is to certify that

DR. BASAVARAJ C METRI

bearing Reg. No. 64274 registered with Karnataka Medical Council , Address BMPMC, Vijayapur has participated as Delegate/ ~~Chairperson~~/ Presented a Scientific Paper (~~Oral~~/Poster) in the XXI Annual Conference of IAMM (KC) conducted at VIMS, Ballari on 18th February 2017.

Karnataka Medical Council has granted 2 credit hours vide letter KMC/CME/929/2016 dated 03.12.2016

Zonal Chairman
Karnataka Medical Council
CME Accreditation Committee

Dr. Surekha Y A
Organising Secretary
Department of Microbiology
VIMS, Ballari

Dr. Krishna S
Organising Chairman
Department of Microbiology
VIMS, Ballari

Proforma

Patient details

Name	:	Age & sex	:
Address	:	IP No. / OP No.	:
Referred by	:	Lab No.	:
Date of receipt	:		

Presenting complaints

Chills and rigors	:	Urgency	:
Frequency	:	Fever	:
Pain abdomen	:	Burning micturation:	

History of present illness:

Past history and treatment

General physical examination

Pallor	:	Pulse	:
Icterus	:	Temperature	:
BP	:		

Systemic examination :

CVS	RS
PA	CNS

Investigation:

Blood routine : Hb TC DC ESR

Urine routine : Microscopy

Sugar Protein

<u>Microbiological study:</u>

I. Preliminary tests:

Gram stainingCatalase test

Slide coagulase

II. Cultural study:

Mac Conkey's Agar: Nutrient agar :

Blood Agar : CLED agar :

III. Biochemical tests :

Tube coagulase DNAase test

Mannitol fermentation Bacitracin disc test

Nonobiosin disc test ornithine decarboxylase

DNAase test Lysostaphin test

Tellurite media Gelatin liquefaction

Phosphatase test Urease test

Nitrate reduction test VP test

Sugar fermentation tests: Mannose, Mannitol, Trehalose, Lactose .

IV. Antibiogram :By Kirby-Bauer disc diffusion method.

Ampicillin	Pefloxacin
Penicillin	Amoxycillin-clavulinic acid
Pipercillin-Tazobactam	Cefoperazone-Salbactam
Cloxacillin	Cephalxin
Ciprofloxacin	Erythromycin
Azithromycin	Tetracycline
Gentamicin	Linezolid
Vancomycin	

V. Detection of the MRSA

- Oxacillin disc diffusion method [13,14]
- Cefoxitin disc diffusion test

VI. Confirmation of MRSA

- PCR amplification of the *mecA* gene.
- Typing of SCCmec gene

Ethical clearance certificate

B.L.D.E. UNIVERSITY

(Declared vide notification No. F.9-37/2007-U.3 (A) Dated. 29-2-2008 of the MHRD, Government of India under Section 3 of the UGC Act,1956)

The Constituent College

SHRI. B. M. PATIL MEDICAL COLLEGE, HOSPITAL AND RESEARCH CENTRE

IEC Ref No, No 01/2012/dt/10/12/12

INSTITUTIONAL ETHICAL CLEARANCE CERTIFICATE

The Ethical Committee of this University met on 21-11-2012 *at* 11 AM *to scrutinize the Synopsis / Research projects of Postgraduate student / Undergraduate student / Faculty members of this University / college from ethical clearance point of view. After scrutiny the following original / corrected & revised version synopsis of the Thesis / Research project has been accorded Ethical Clearance.*

Title Detection of Methicillin Resistant Staphylococcus Aureus (MRSA) in Tertiary care hospital of North Karnataka.

Name of P. G. / U. G. Student / Faculty member Dr Basavaraj. C. Metri

Associate Professor Dept of Microbiology

Name of Guide

Dr. Sharada Metgud
Chairperson, I.E.C
BLDE University,
BIJAPUR – 586 103

Mr.G.V.Kulkarni
Secretary,I.E.C
BLDE University,
BIJAPUR – 586 103.

Institutional Ethical Committee
BLDEU's Shri B.M. Patil
Medical College,BIJAPUR-586103.

Following documents were placed before Ethical Committee for Scrutinization:

- Copy of Synopsis / Research project
- Copy of informed consent form
- Any other relevant document's

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Articles published:

Innovare Academic Sciences

International Journal of Pharmacy and Pharmaceutical Sciences

ISSN- 0975-1491 Vol 7, Issue 7, 2015

Original Article

DRUG RESISTANCE PATTERNS OF CLINICAL ISOLATES OF *STAPHYLOCOCCUS AUREUS* IN TERTIARY CARE CENTER OF SOUTH INDIA

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ABSTRACT

Objectives: *Staphylococcus aureus* were initially described in 1961 and emerged in the last decade as one of the most important nosocomial pathogens. The current study was undertaken to provide data for empirical selection of appropriate antibiotics for the treatment of diseases caused by *S. aureus*.

Methods: Various clinical samples like pus, urine, stool, sputum, blood and other body fluids of patients were selected for study from June 2012 to June 2013. *Staphylococcus aureus* were identified by various biochemical tests and antimicrobial susceptibility testing of the isolates were performed by Kirby Bauer disc diffusion method. Detection of the MRSA was done by Oxacillin disc diffusion method.

Results: A total of 137 isolates of *S. aureus* were obtained over duration of 12 months. These included isolates from the sample of pus, urine, sputum, body fluids. Out of 137 *S. aureus* strains isolated, 62 (45.3%) were identified as MRSA and 75 (54.7%) were identified as MSSA based on oxacillin disk diffusion method. Anti-biograms revealed the high level of resistance among MRSA isolates when compared to MSSA isolates The most effective agent against MRSA isolates was linezolid (96.8%sensitive), followed by tetracycline (90.9%) and piperacillin/tazobactam (80.6%).

Conclusion: The prevalence of MRSA in our hospital was high. Therefore to reduce the incidence of infections due to MRSA, we suggest implementation of the strict antibiotic policy guidelines and continuous monitoring of antibiotic susceptibility patterns of such pathogens.

Keywords: Antibiotic susceptibility pattern, Drug resistance, Methicillin resistant *Staphylococcus aureus* (MRSA), antibiotic resistance, *Staphylococcus aureus*.

INTRODUCTION

Staphylococcus aureus was first described by Sir Alexander Ogston in 1882. This centuries-old pathogen still causes significant morbidity and mortality despite huge advances in medical care. Indeed, infections due to *S. aureus* continue to grow in number and complexity as a consequence, ironically, of advances in patient care and of its ability to adapt to a changing environment [1, 2].

Methicillin resistant *Staphylococcus aureus* (MRSA) strains emerged after the introduction of methicillin into the clinical practice [3]. Methicillin resistant *Staphylococcus aureus* (MRSA) strains were initially described in 1961 and emerged in the last decade as one of the most important nosocomial pathogens. Infected and colonized patients provide the primary reservoir and transmission is mainly through hospital staff [4].

The risk factors which contribute to MRSA are excessive antibiotic usage, prolonged hospitalization, intravascular catheterization and hospitalisation in an intensive care unit. With the increased incidence of MRSA, the effectiveness of penicillin and cephalosporins is questioned. In fact many strains of MRSA exhibit resistance to beta-lactams and aminoglycosides [4]. The worst feature of MRSA has been simultaneous drug resistance to many of the antibiotics, chronic carrier stage among health care workers and greater resistance of the strains [5]. The current study was undertaken to provide data for empirical selection of appropriate antibiotics for the treatment of diseases caused by *S. aureus*.

MATERIALS AND METHODS

Source of data

The study was conducted in the Department of Microbiology, Shri B. M Patil Medical College Hospital, Bijapur. *S. aureus* isolated from all the clinical samples that came to the microbiology department formed the material for study.

Ethical clearance and consent

The study was conducted after obtaining the ethical clearance from institutional ethical committee.

Method of collection of data: (including sampling procedure)

Various clinical samples like pus, urine, stool, sputum, blood and other body fluids of patients attending Shri B M Patil Medical College and Hospital were selected for study for a period of one year from June 2012 to June 2013.

Statistical analysis

Data was analyzed by

1) Diagrammatic representation

2) Proper statistical tests like chi square test etc.

Inclusion criterion

Samples which yielded *S. aureus* were included in the study.

Exclusion criterion

Samples which did not yield *S. aureus* were excluded from the study.

Specimens were screened by preliminary Gram's stain and then inoculated on 10% sheep blood agar and MacConkey's agar. *S. aureus* was identified by conventional techniques [6]. Antimicrobial susceptibility testing of the isolates was performed by Kirby Bauer disc diffusion method using following discs. penicillin-G (10 unit); cloxacillin (30µg); cephalexin (30µg); cefuroxime(30 µg); tetracycline (30µg);erythromycin (15µg); gentamycin (10µg); ciprofloxacin (5µg); pefloxacin (5µg); Cefoperazone/salbactam(75 µg/30 µg) pepercillin/tazobactam(100µg/10 µg); amoxicillin/ clavulanic acid (20 µg/10 µg); azithromycin(15µg); linezolid (15µg). Finally, the data were recorded and analyzed at the completion of

ASIAN JOURNAL OF PHARMACEUTICAL AND CLINICAL RESEARCH

INNOVARE ACADEMIC SCIENCES
Knowledge to Innovation

Vol 8, Issue 2, 2015

ISSN - 0974-2441

Research Article

SCREENING OF *STAPHYLOCOCCUS AUREUS* AND COAGULASE NEGATIVE STAPHYLOCOCCUS FROM URINE SAMPLES

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Received: 02 September 2014, Revised and Accepted: 25 October 2014

ABSTRACT

Objectives: The resistance profile of isolated Gram-positive organisms such as *Staphylococcus aureus* were left undone despite the increasing prevalent rate of this organism in urinary tract infections (UTI) and its role in antibiotic resistance. Therefore, the current study was carried out to identify the antibiotic resistance pattern of the *S. aureus* and coagulase negative Staphylococcus (CONS).

Methods: The study was carried out in the Department of Microbiology, Shri BM Patil Medical College, Bijapur, India over a period of 3 years from January 2010 to December 2012. Urine specimens from both outpatients and inpatients of our hospital having one or more urinary symptoms, such as burning during micturition, fever, pyuria, frequency of urine, dysuria, hematuria, flank pain, suprapubic discomfort, etc., were processed.

Results: Out of total staphylococcal isolates, 55% were *S. aureus* and 45% were CONS. Out of total isolates of Staphylococci 60.5% were from inpatient department and 39.5% were from out patient department. Linezolid (9.52%) pepercillin/tazobactam (14.3%) cefoperazone/salbactan (28.6%) showed least resistance against *S. aureus* and penicillin-G (90.5%), cloxacillin (71.4%), ciprofloxacin (71.4%) showed highest resistance against *S. aureus*. CONS isolates showed similar resistance profile, but when compared with *S. aureus*, CONS were more sensitive to the all antibiotic used.

Conclusion: This study observed that Staphylococcus is the one of the most common etiologic agent of UTI in our hospital. The drug of choice that could be considered in the treatment of UTI caused by staphylococcus in our setting are linezolid, pepercillin/tazobactam, cefoperazone/salbactan. Staphylococcus was found to be highly resistant to penicillin-G, cloxacillin, and ciprofloxacin.

Keywords: Antimicrobial resistance, Drug resistance, *Staphylococcus aureus*, Coagulase negative staphylococcus, Urinary tract infections.

INTRODUCTION

Staphylococcus aureus is one of the most important pathogens affecting humans, has acquired resistance to various antibiotics and is a leading cause of hospital and community acquired infections [1]. *S. aureus*, which was first isolated by Alexander Ogston in 1880s, is known to cause post-operative wound infections. The mortality rate of the individuals, due to *S. aureus*, infections was around 80% before the introduction of penicillin. The first penicillin resistant *S. aureus* was isolated from a clinical environment in 1942. The problem of penicillin resistance was later circumvented by the introduction of methicillin. In 1961, methicillin resistant *S. aureus* made an appearance, probably due to the acquisition of the mecA gene, leaving vancomycin as the drug of last resort to treat it [2].

Urinary tract infections (UTI) are one of the most common bacterial infections in humans both in the community and hospital setting [3]. UTI is a heterogeneous disease, which can be divided into several types of infection, such as acute, uncomplicated bacterial pyelonephritis, complicated UTI, recurrent cystitis and asymptomatic bacteriuria. The urinary tract is generally a hostile environment for bacteria and except for the distal urethra it is usually sterile. Infection results when the bacteria virulence factor overcomes the numerous host defense mechanism [4].

The common pathogens of UTI include enteric Gram-negative bacteria with *Escherichia coli* being the most predominant, coagulase negative *Staphylococcus saprophyticus* (CONS) accounting for 10-20% while *Proteus mirabilis*, *Klebsiella* and *Enterococcus* account for <5%. However, recent studies have reported the increasing prevalence of *S. aureus* in UTIs [4-9].

This changing spectrum of microorganisms involved in UTI necessitates the need for continuous and regular antimicrobial resistance surveillance in these organisms in order to guide empirical therapy in UTI. Most studies on UTI have concentrated on the antimicrobial resistance profile of Gram-negative enterobacteria, especially *E. coli* which is known to be the most prevalent UTI causative organism while the resistance profile of isolated Gram-positive organisms such as *S. aureus*, were left undone despite the increasing prevalent rate of this organism in UTI and its role in antibiotic resistance [9]. Therefore, the current study was done to identify the antibiotic resistance pattern of the *S. aureus* and CONS.

METHODS

The study was carried out in the Department of Microbiology over a period of 3 years from January 2010 to December 2012.

Ethical clearance and consent

As it was a retrospective study, ethical clearance and consent were not obtained.

Patient evaluation

Urine specimens from both outpatients and inpatients of our hospital having one or more urinary symptoms, such as burning during micturition, fever, pyuria, frequency of urine, dysuria, hematuria, flank pain, suprapubic discomfort, etc., were processed.

Inclusion criterion

Urine samples which yielded *Staphylococcus* were included in the study.

Master Chart

Sl. No	NAME	AGE	WARD	SEX	OI	DATE	DOC	DEPT	HISTORY	oxacillin disc diffusion	cefoxitin disc diffusion	PCR mec A gene	Penicillin-G	Erythromycin	Tetracycline	Cephalexin	Cloxacillin	Pefloxacin	Pepercillin/tazobactam	Cefoperazone/salbactan	Gentamycin	Ciprofloxacin	Amoxicillin/clavulanic acid	Cefuroxime	Azithromycin	Vancomyc	Linezolid
1	BHIMANN	38	IPD	MALE	I-12857	12-Jun	RAMAKAN	SUR	LEG ABCESS	S	S	N	R	S	S	S	R	R	S	S	I	R	I	S	S	S	S
2	BHIMANN	19	IPD	MALE	I-12826	12-Jun	TEJASWI	SUR	HAND ABC	S	S	N	R	S	S	S	R	S	S	S	S	S	S	S	S	S	S
3	POOJA	16	OPD	FEMALE	O-156364	13-Jun	K S PATIL	SUR		S	S	N	R	S	S	R	R	R	S	S	S	R	R	S	R	R	S
4	BORAMM	30	IPD	FEMALE	I-12999	14-Jun	B B META	SUR	ARM CELLU	R	R	Y	R	S	S	S	R	I	S	S	S	R	I	S	S	S	S
5	AISHWAR	5	IPD	FEMALE	I-13177	16-Jun	S VPATI	SUR	THIGH ABCESS	S	S	N	R	S	S	S	R	R	S	S	S	R	S	S	R	S	S
6	BANDENN	45	IPD	MALE	I-13130	16-Jun	TEJASWI	SUR	BERGER DISEASE	R	R	Y	R	R	R	R	R	R	S	S	R	R	R	R	S	S	S
7	SANGAWI	50	IPD	FEMALE	I-13441	19-Jun	RAMAKAN	SUR	GLUTIAL ABSCESS	R	R	Y	R	R	S	S	R	R	S	S	R	R	R	S	R	S	S
8	NAGARAT	45	OPD	FEMALE	O-167086	20-Jun	VENKATE	ENT	CSOM	S	R	Y	R	S	S	S	R	R	S	S	S	R	R	S	S	S	S
9	VANMALA	52	IPD	FEMALE	I-11402	21-Jun	METAN	SUR	GLUTIAL ABSCESS	S	S	N	R	S	S	R	R	R	S	S	I	R	R	S	S	S	S
10	DUNDAPP	46	IPD	MALE	I-13770	23-Jun	RASHMI	SUR	FOOT ABCESS	S	S	N	R	S	S	S	R	R	S	S	S	R	R	S	S	S	S
11	BHIMROA	76	IPD	MALE	I-13934	25-Jun	TEJASWI	SUR	GLUTIAL ABSCESS	R	R	Y	R	S	S	R	R	R	S	S	R	R	R	S	S	S	S
12	BIDGANGA	9D	IPD	MALE	I-13930	25-Jun	KALYANS	SUR	ABCES NECK	R	S	N	R	S	S	S	R	R	S	S	S	R	S	S	R	S	S
13	SHIVANAI	50	IPD	MALE	I-14033	30-Jun	VIJAYA	SUR	ABCESS LEFT ARM	S	S	N	R	R	S	S	R	R	S	R	S	R	R	S	R	R	S
14	SANGAMI	45	IPD	FEMALE	I-14347	30-Jun	VIJAYA	SUR	GLUTIAL ABSCESS	S	S	N	R	R	S	S	R	R	S	S	S	R	S	S	R	S	S
15	SAVITHA	24	IPD	FEMALE	I-14672	4-Jul	JAJU	OBG	UTI	S	S	N	R	S	S	S	S	R	S	S	S	R	S	S	R	S	S
16	DYMAWV	40	IPD	FEMALE	I-14464	3-Jul	M S BIRA	MED	RVD	S	S	N	R	S	S	S	R	R	S	S	R	R	R	S	S	S	S
17	SANGAPP	42	IPD	MALE	I-14653	5-Jul	METAN	SUR	ABCESS	S	S	N	R	R	R	S	R	R	S	S	R	R	R	S	S	S	S
18	KRISHNAI	75	OPD	MALE	O-182547	5-Jul	OBP	ORTHO	INFECTED	S	R	Y	R	S	S	S	R	R	S	S	S	R	S	S	S	S	S
19	YELLAPP	65	IPD	MALE	I-14143	8-Jul	TEJASWI	OBG	LIVER ABCESS	S	S	N	R	S	S	S	R	R	S	S	S	R	S	S	S	S	S
20	SURESH	49	IPD	MALE	I-15241	15-Jul	GIRISH	SUR	TOE ULCER	S	S	N	R	R	S	S	R	R	S	S	S	R	R	S	R	S	S
21	ASHOK	48	IPD	MALE	I-15694	21-Jul	BASAVAR	SUR	PERINIAL ABCESS	S	S	N	R	S	S	S	R	R	S	S	S	R	S	S	S	S	S
22	JAYASHR	25	OPD	FEMALE	O-199619	22-Jul	ARUNA	OBG	WOUND INF	S	S	N	R	S	S	S	R	R	S	S	S	R	S	S	S	S	S
23	MADHU	30	IPD	MALE	I-16038	21-Jul	VIJAYA	SUR	ABCSSFACE	S	S	N	R	S	S	S	R	R	S	S	S	R	S	S	R	S	S
24	MAULASA	12	IPD	MALE	I-15895	22-Jul	KOTENNA	SUR	ILIAC ABCESS	S	S	N	R	S	S	S	R	S	S	S	S	R	I	S	S	S	S
25	RAMAPPA	64	IPD	MALE	I-16052	21-Jul	N H KULK	ENT	ORAL ULCER	R	R	Y	R	S	S	S	R	R	S	S	S	R	R	S	S	R	S
26	GURAPPA	28	IPD	MALE	I-16034	23-Jul	TEJASWI	SUR	RTA	S	S	N	S	S	S	S	R	S	S	S	S	S	S	S	S	S	S
27	SHASHIK	5	IPD	MALE	I-16122	24-Jul	N H KULK	ENT	EAR ABCESS	S	S	N	R	S	S	S	R	R	S	S	S	R	S	S	S	S	S
28	IRAPPA	49	IPD	MALE	I-16664	29-Jul	S B PATIL	URO	CALCULI	S	S	N	R	S	S	S	R	R	S	S	S	R	R	S	S	S	S
29	NISHA	2	IPD	FEMALE	I-16477	28-Jul	RAVI PAT	SUR	ABCESS NECK	S	S	N	R	S	S	S	R	R	S	S	S	R	R	S	S	S	S
30	PUTTAPP	36	IPD	MALE	I-16452	30-Jul	NAYAK	SUR	PAIN KNEE	S	S	N	R	S	R	S	R	S	S	S	S	S	R	S	S	S	S
31	SHNTABA	45	IPD	FEMALE	I-16684	30-Jul	METAN	SUR	PERIANAL	S	S	N	R	S	S	S	R	R	S	S	R	R	S	S	S	S	S
32	ASHOK	27	OPD	MALE	O-210697	2-Aug	SANTOSH	SUR	SWELLING INNECK	S	S	N	R	S	S	S	R	R	S	S	S	R	R	S	S	R	S
33	NINGAPP	75	IPD	MALE	I-17023	4-Aug	S N KARI	SUR	ABCESS LEG	S	S	N	R	S	S	S	R	S	S	S	S	R	S	S	S	S	S
34	BIO SUN	2D	IPD	FEMALE	I-16781	4-Aug	BABU NYI	SUR	SUBMANDIBULAR	AES	S	N	R	S	S	S	R	R	S	S	S	R	R	S	S	S	S
35	CHIDANA	60	IPD	MALE	I-17264	6-Aug	A C INAM	SKIN	PAMPIGUS VULGAR	S	S	N	R	S	S	S	R	R	S	S	S	R	I	S	S	S	S
36	SABANNA	54	OPD	MALE	O-207807	9-Aug	TEJASWI	SUR	FISTULA IN ANO	S	S	N	R	S	S	S	R	R	S	S	S	R	R	S	S	S	S
37	BASANGC	55	IPD	MALE	I-16141	14-Aug	TEJASWI	SUR	ABCESS	S	R	Y	R	R	S	R	R	R	S	S	R	R	S	S	R	R	S
38	NAGAYYA	20	OPD	MALE	O-211275	16-Aug	SANTOSH	SUR	FISTULA IN ANO	R	R	Y	R	R	S	S	R	R	S	S	R	R	R	R	R	S	S
39	DUNDAWI	62	IPD	FEMALE	I-18070	16-Aug	A C INAM	SVD	BULLOUS PAMPIGO	S	S	N	R	R	S	S	R	R	S	S	S	R	R	R	R	S	S
40	DEEPA	25	OPD	FEMALE	O-208092	23-Aug	METAN	SUR		S	R	Y	R	S	S	S	R	R	S	S	R	R	R	R	I	S	S
41	FAZAL	62	IPD	MALE	I-18339	23-Aug	L S PATIL	MED	LRTI	S	S	N	R	S	S	S	R	R	S	S	S	R	R	R	S	S	S
42	RAJASHR	26	OPD	FEMALE	O-231035	23-Aug	KARADI	ENT	SINUSITIS	S	R	Y	R	S	R	R	R	R	S	S	R	R	R	R	S	R	S
43	VANI	24	IPD	FEMALE	I-18725	25-Aug	M B PATIL	SUR	BREST ABCESS	S	S	N	R	R	S	S	R	R	S	S	S	S	S	R	R	S	S
44	PAIGAMB	25	IPD	MALE	I-17246	25-Aug	SANTOSH	SUR	FOOT ULCERT	S	S	N	R	R	S	S	R	R	R	S	S	I	R	R	R	S	S
45	SAHEBGC	60	IPD	MALE	I-19088	27-Aug		SUR	CELLULITIS	S	S	N	R	R	S	S	R	R	S	S	S	S	R	S	R	S	S
46	VIRUPAK	55	IPD	MALE	19180	29-Aug	GUGGARI	SUR	SEPTAL ABSCESS	R	R	Y	R	R	R	S	R	R	S	S	S	R	R	R	R	R	S
47	SWETA	6	OPD	FEMALE	O-241301	1-Oct	APARNA I	SKIN	ACUTE PARNYCHI	S	S	N	R	S	S	S	R	R	S	S	S	I	R	R	S	S	S
48	VAISHNA	2	IPD	FEMALE		29-Aug	NYAMMA	SUR	SUBMANDIBULAR A	R	R	Y	R	S	S	R	R	R	S	S	S	R	R	R	S	S	S
49	AJAY	23	IPD	MALE	I-19771	5-Sep	TEJASWI	SUR	CELLULITIS	S	S	N	R	R	S	S	R	R	S	S	S	R	R	S	R	S	S
50	MOHAN	24	OPD	MALE	244422	5-Sep	NAYAK	ORTHO	OSTEOMYELITIS	S	S	N	R	S	S	S	R	R	S	S	S	R	R	S	S	S	S

51	SOUMYA	7	IPD	FEMALE		I-19666	5-Sep	TEJASWI	SUR		GLUTIAL ABSCESS	S	S	N	R	R	S	S	R	R	S	S	S	R	R	S	S	S	S
52	PRAJWAL	2	OPD	MALE		O-245783	5-Sep	KARADI	ENT		NASION ABSCESS	S	S	N	R	R	S	S	R	R	S	S	S	S	S	S	S	S	S
53	KAVITHA	40	IPD	FEMALE		I-19920	6-Sep	MANPREE	OBG		ANC	S	S	N	R	S	R	S	R	R	S	R	S	R	S	S	S	S	S
54	JYOTHI	30	OPD	FEMALE			18-Sep	GURURAJ	SURGERY		BREAST ABSCESS	R	R	Y	R	R	S	R	R	R	S	R	R	R	R	R	S	S	S
55	BANDAWI	70	IPD	FEMALE		I-20289	9-Sep	DEEPAK	MED		PYOPNEUMOTHORA	S	S	N	R	S	S	S	R	R	R	S	R	R	S	R	R	S	S
56	KASHIBAI	70	IPD	FEMALE		I-20910	16-Sep	SHOBHA	OBG			R	R	Y	R	R	S	S	R	R	S	S	S	R	R	S	R	S	S
57	PRAKASH	18	IPD	MALE		I-20599	16-Sep		SURGERY		GLUTIAL ABSCESS	R	R	Y	R	S	S	R	R	S	S	R	R	R	R	R	S	S	S
58	MALLAYY	53	IPD	MALE		I-20784	16-Sep	BADIGER	MED		?TB	R	R	Y	R	S	S	R	R	R	S	R	R	R	R	R	S	S	S
59	SHARAN	10	OPD	MALE		O-260155	19-Sep	MALIPATI	ENT		CSOM	S	S	N	R	R	S	S	R	R	S	R	R	R	R	S	S	R	R
60	SEETA	40	OPD	FEMALE		O-257568	19-Sep	TEJASWI	SURGERY		GRANULOMA	R	S	N	R	R	S	S	R	I	S	S	S	R	R	S	S	S	S
61	SHIVAJI M	35	IPD	MALE		I-21471	23-Sep	DESHMU	SKIN		SKIN LESIONS ON S	R	R	Y	R	R	R	R	R	S	S	S	S	R	R	R	R	R	R
62	SHEETHA	38	IPD	FEMALE		I-22971	5-Oct	A C INAM	SKIN		PSORIASIS	S	S	N	R	S	S	S	R	R	S	R	S	R	R	S	S	S	S
63	SADANA	14	IPD	FEMALE		I-22943	10-Oct	GOBBUR	PED		PUSTULES	S	S	N	R	R	S	S	R	R	S	R	R	R	S	R	R	S	S
64	SANTOSH	24	OPD	MALE		I-282836	11-Oct		ORTHO		OSTEOMYELITIS	S	S	N	S	R	S	S	S	R	S	R	S	R	R	S	R	R	S
65	PRAJWAL	7	OPD	MALE		O-300791	31-Oct	JARIWALA			POSTURETHRAL VA	R	R	Y	R	S	S	S	R	R	S	S	S	S	S	S	S	R	R
66	BHIMAPP	75	IPD	MALE		I-24666	11-Nov	KOTENNA	SURGERY		INFECTED CORN	S	S	N	S	R	S	R	S	I	S	S	S	S	S	S	S	S	S
67	SUREKHA	30	IPD	FEMALE		I-24585	11-Nov	TEJASWI	SURGERY		CELLULITIS	S	S	N	R	R	S	S	R	I	S	S	R	S	S	S	R	S	S
68	TABASUM	21	IPD	FEMALE		I-25927	14-Nov	M S BIRAI	MED		DIABETIC KETOACI	S	S	N	R	S	S	R	S	S	S	S	S	S	R	S	S	R	S
69	SUGUNA I	75	IPD	FEMALE		I-25869	14-Nov	TEJASWI	SURGERY			R	R	Y	R	R	R	R	R	R	S	S	R	S	S	S	R	S	S
70	SHIVANA	60	IPD	MALE		I-22429	7-Nov	M B PATIL	SURGERY			S	S	N	R	S	S	R	S	I	S	S	S	S	R	R	S	S	S
71	SUCHITRA	8	OPD	FEMALE		O-320581	21-Nov	MALIPATI	ENT		CSOM	R	R	Y	R	R	S	S	S	R	R	S	R	S	S	S	S	S	S
72	MALLIKARJUN	80	IPD	MALE		I-27266	26-Nov	WARAD	MED		DIABETES	S	S	N	R	S	S	R	S	R	R	S	S	R	R	S	S	R	R
73	SHIVALIN	49	IPD	MALE		I-27883	1-Dec	VIJAYA	SUR			S	S	N	R	S	S	S	R	R	S	S	S	R	R	S	S	S	S
74	SIDDAPP	55	IPD	MALE		I-28107	2-Dec	KOTENNA	SUR		NECROTISING FACI	S	S	N	R	S	S	S	S	I	S	S	R	S	R	S	S	S	S
75	SHARANA	55	IPD	MALE		I-28142	6-Dec	KARADI	ENT		PINNA ABSCESS	R	R	Y	R	R	S	R	R	R	S	S	R	R	R	S	S	S	S
76	SIKANDA	28	IPD	MALE		I-28420	6-Dec	HEMANTH	SUR			R	R	Y	R	R	S	R	R	R	S	S	R	R	R	R	R	S	S
77	SADASHI	40	IPD	MALE		I-28257	6-Dec	HONNUTA	MED		BREATHLESSNESS	R	R	Y	R	S	S	S	S	S	S	S	S	I	R	S	S	S	S
78	ROHINI	28	OPD	FEMALE		O-339838	6-Dec	KARADI	ENT		CSOM	R	R	Y	R	R	S	S	R	S	S	S	R	R	R	S	S	S	S
79	MANOHAR	45	IPD	MALE		I-25086	14-Dec	METAN	SURGERY		NECROTISING FACI	R	R	Y	R	R	I	R	R	R	S	R	R	R	S	R	R	S	S
80	SHRIDEVI	15	OPD	FEMALE		O-338465	17-Dec	LATHADE	ENT		ASOM	S	S	N	R	R	R	R	R	S	S	S	R	I	I	R	R	S	S
81	NAGESH	80	OPD	MALE		O-22886	17-Dec	METAN	SURGERY		BLEEDING ULCER	S	S	N	R	R	S	S	S	I	S	S	S	R	I	S	S	S	S
82	SANGEET	31	OPD	FEMALE		O-353374	19-Dec	MUDANUR	OBG		ABSCESS	S	S	N	R	R	R	S	R	R	S	S	S	R	S	S	R	S	S
83	PARVATI	45	OPD	FEMALE		O-355089	21-Dec	LATHADE	ENT		SEPTAL ABSCESS	S	S	N	R	R	S	I	S	R	S	S	S	R	R	I	R	S	S
84	NIRANJAN	2	IPD	MALE		I-30241	25-Dec	TEJASWI	SURGERY		SUPPURATIVE LYMI	S	S	N	R	S	S	S	R	R	S	S	S	R	S	S	S	S	S
85	SUJALAB	70	IPD	FEMALE		I-30825	31-Dec	S M BIRAI	MED		ABSCESS	S	S	N	R	R	S	S	R	S	S	S	S	R	S	S	R	S	S
86	AMIRUDD	25	IPD	MALE		I-30834	1-Jan	INAMDAR	SKIN		CELLULITIS	R	R	Y	R	S	S	S	R	S	S	S	S	R	R	R	S	S	S
87	KOLKAR	35	OPD	MALE		O-7723	6-Jan	KARADI	ENT		LUDWIG ANGINA	R	S	N	R	R	S	S	R	I	S	S	R	R	R	S	R	S	S
88	LALITA	51	OPD	FEMALE		O-580	7-Jan	N H KULK	ENT			R	R	Y	R	R	S	R	R	I	S	S	S	R	R	S	R	S	S
89	MALLAPP	50	IPD	MALE		I-1067	12-Jan	VIJAYA	SUR		NACROTIZING FASC	S	S	N	R	R	S	S	R	R	S	S	S	R	R	S	R	S	S
90	BASAVAR	13	OPD	MALE		O-14957	13-Jan	HARIDAS	ORTHO		OSTEOMYELITIS	R	R	Y	R	R	S	R	I	R	S	S	S	S	R	R	S	R	R
91	SAVITHRI	65	IPD	FEMALE		I-1217	15-Jan	TEJASWI	SUR		ABCESS	R	S	N	R	R	S	R	R	S	S	S	R	R	R	R	R	S	S
92	KASTURB	55	OPD	FEMALE		O-15678	20-Jan	BASAVAR	SURGERY		RT HAND ABSCESS	S	S	N	S	R	S	S	R	R	S	S	S	S	S	S	R	S	S
93	LAKKAWV	20	IPD	FEMALE		I-1327	29-Jan	MUDANUR	OBG		PPH SEVERE ANEM	S	S	Y	R	R	S	S	R	I	S	S	R	S	R	I	R	S	S
94	MALLAPP	50	IPD	MALE		I-1067	1-Feb	VIJAYA	SURGERY		ABSCESS OVER PO	S	S	N	R	R	S	S	R	R	S	R	S	S	S	S	S	S	S
95	RAVI	1.5	IPD	MALE		I-3789	11-Feb		ENT		SUBMANDIBULAR A	S	S	N	R	R	S	R	R	R	S	R	R	R	R	S	S	S	S
96	RACHANA	64	IPD	MALE		I-3898	11-Feb	INAMDAR	SKIN		PEMPHIGUS	R	R	Y	R	R	R	S	R	R	S	S	R	R	R	S	R	R	S
97	PREETI	24	IPD	FEMALE		I-3788	13-Feb	JAYASHR	OBG		FEVER WITH CHILLS	S	S	N	R	S	S	R	R	R	S	S	S	R	R	S	S	S	S
98	LAXMAN	40	IPD	MALE		I-5221	25-Feb	HONNUTA	MED			S	S	N	R	S	S	R	R	R	S	S	S	R	R	S	R	S	S

99	RAVI	29	IPD	MALE		I-8967	31-Mar	HEMANTH	SUR	PERIANAL ABCESS			R	R	Y	R	R	S	R	R	S	S	S	S	S	S	S	R	S
100	GEETA	24	IPD	FEMALE		I-8825	29-Mar	NEELAMN	OBG				S	S	N	R	S	S	S	R	S	R	R	R	S	S	S	S	S
101	KALLAPP/	65	IPD	MALE		I-8844	30-Mar	VIJAYA	SUR				R	R	Y	R	R	S	R	R	R	S	R	R	R	S	R	S	S
102	SHIVARA/	25	IPD	MALE		I-8841	30-Mar	VIJAYA	SUR	PERIANAL ABCESS			R	R	Y	R	S	S	R	R	R	R	R	R	S	S	S	R	S
103	VIJAY	30	OPD	MALE		O-102465	2-Apr	KARADI	ENT	CSOM			S	S	N	R	R	S	S	R	S	R	R	S	R	R	S	R	S
104	BASAPPA	56	IPD	MALE		I-9084	2-Apr	TEJASWI	SUR	ABCESS GREAT TOI			R	R	Y	R	S	S	R	R	S	R	S	S	R	R	S	S	S
105	PRAKASH	55	IPD	MALE		I-9011	2-Apr	S B PATI	URO	SCROTAL ABCESS			R	R	Y	R	R	S	R	R	S	R	S	S	R	R	S	R	S
106	VITHOB	55	IPD	MALE		I-9407	4-Apr	BASAVAR	SUR	DM WITH ABCESS			S	S	N	R	R	S	R	R	S	S	S	S	S	R	S	S	S
107	ANWASAA	46	IPD	MALE		I-9382	4-Apr	BASAVAR	SUR	DM WITH CARBUNC			S	R	Y	R	R	S	S	R	R	S	S	S	S	R	S	S	S
108	BASAVAR	20	OPD	MALE		O-103826	4-Apr	MB PATIL	SUR	AXILA ABCESS			S	R	Y	R	S	S	R	R	S	R	S	R	R	R	R	S	S
109	MARUTI	70	IPD	MALE		I-9648	7-Apr	RAVI PAT	SUR	FOURNIERS GANGR			R	R	Y	R	R	S	S	R	S	S	S	R	R	R	R	R	S
110	SAVITRI	25	OPD	FEMALE		O-127984	27-Apr	NH KULK/	ENT	CSOM			R	R	Y	S	R	S	S	S	R	S	S	R	R	S	S	R	S
111	TANUJA	12	OPD	FEMALE		O-127947	29-Apr	NH KULK/	ENT	CSOM			S	S	N	S	R	S	S	R	S	R	S	S	S	R	S	S	S
112	BASAVAR	52	IPD	MALE		I-11926	30-Apr	HEMANTH	SUR				R	R	Y	R	R	R	R	R	R	R	R	S	R	R	R	R	S
113	CHANDRA	57	IPD	MALE		I-12548	7-May	VIKRAM	SUR				R	R	Y	R	S	S	S	S	R	S	S	S	R	R	S	S	S
114	RUKMINI	75	IPD	FEMALE		I-12505	7-May	AJIT	SUR	CELLULITIS			S	R	Y	R	S	S	R	S	R	S	S	S	S	S	S	S	S
115	SURESH	40	IPD	MALE		I-13603	20-May	APARNA I	SKIN	DERMATITIS			R	R	Y	R	R	S	R	S	R	S	S	S	R	R	S	S	S
116	KENCHAV	55	IPD	FEMALE		I-14321	25-May	MB PATIL	SUR	GLUTAL ABSCESS			R	R	Y	S	R	I	R	S	S	S	S	S	R	R	S	R	S
117	PRABHA	24	IPD	FEMALE		I-14469	27-May		SUR	PERIANAL ABCESS			R	R	Y	R	S	S	R	R	R	S	S	S	R	R	R	R	S
118	SIDDARA	18	IPD	MALE		I-13915	28-May	SB PATIL	URO				S	S	N	R	S	S	S	S	R	S	S	S	I	I	S	R	S
119	NIMBANN	52	IPD	MALE		I-15336	8-Jun		SUR	PAROTID ABSESS			S	R	Y	R	R	S	S	S	R	S	S	R	R	S	S	R	S
120	RAJSHEK	28	IPD	MALE		I-14904	9-Jun	NAYAK	ORTHO	RTA			S	R	Y	R	R	S	R	S	R	R	R	R	R	R	R	R	S
121	CHANDRA	57	IPD	MALE		I-15653	8-Jun	VIJAYA	SUR	FOURNIERS GANGR			S	S	N	R	R	S	R	R	R	I	I	R	R	R	R	R	R
122	SANJU	41	OPD	MALE		O-176098	12-Jun	NAYAK	ORTHO	REDIAL FRACTURE			S	S	N	S	S	S	S	R	S	S	S	S	S	S	S	S	S
123	DESHPAN	38	OPD	MALE		O-176134	12-Jun	METAN	SUR	ABCESS THIGH			S	S	N	R	S	S	S	R	S	S	S	S	S	S	S	S	S
124	ARTHI	20	OPD	FEMALE		O-154868	11-Jun	HEMANTH	SUR	THIGH ABCESS			R	R	Y	R	I	S	R	R	R	I	R	S	R	R	S	I	S
125	PRAVEEN	40	OPD	MALE		O-173858	11-Jun	NH KULK/	ENT	CSOM			R	R	Y	R	S	S	R	R	R	R	R	S	R	R	R	R	S
126	BASAVVA	58	IPD	FEMALE		I-15462	13-Jun		SUR	LL ABCESS			R	R	Y	R	S	S	R	R	R	S	I	S	R	S	S	I	S
127	HANAMAN	60	IPD	MALE		I-16346	15-Jun	SANTOSH	MED	KOCH			S	S	N	R	I	S	S	R	R	S	S	S	R	S	S	R	S
128	PRAVEEN	6	IPD	MALE		I-16334	15-Jun	VIJAYA	SUR	RT ARM ABCESS			R	R	Y	R	I	S	R	R	R	R	S	R	R	I	R	S
129	SIDDAPP/	12	IPD	MALE		I-15841	20-Jun	PATTANSI	ORTHO	ULNA FRA			R	R	Y	R	R	S	R	R	R	S	R	S	S	R	R	R	S
130	SHANKAR	42	OPD	MALE		O-184228	20-Jun	TEJASWI	SUR				R	R	Y	R	R	S	R	R	R	S	R	R	S	R	S	R	S
131	KAVERI	10	IPD	FEMALE		I-17257	24-Jun	NAYAK	ORTHO	ABCESS			R	R	Y	R	R	S	R	S	R	S	S	S	R	R	R	S	S
132	GURULIN(	78	IPD	MALE		I-17015	22-Jun	KOTENNA	SUR	ABCESS			R	R	Y	R	S	S	S	S	S	S	S	R	S	R	S	S	S
133	SHASHIKA	40	IPD	FEMALE		I-17199	25-Jun	TEJASWI	SUR	ABCESS			R	R	Y	R	I	S	R	R	S	R	R	S	S	R	R	I	S
134	VITTAL	58	IPD	MALE		I-17224	25-Jun	TEJASWI	SUR	CELLULITIS			R	R	Y	R	R	S	R	R	S	R	R	R	R	R	R	R	S
135	SRISHAIL	45	OPD	MALE		O-191795	26-Jun	RANI BEB	ENT	ASOM			S	S	N	R	R	S	S	R	R	R	R	S	R	R	S	S	S
136	CHDANAI	50	IPD	MALE		I-17059	1-Jul	INAMDAR	SKIN	PV			R	R	Y	R	R	S	R	R	R	R	R	S	R	R	R	R	S
137	SUHASINI	28	IPD	FEMALE		I-18024	2-Jul	APARNA I	SKIN	IMPETIGO			R	R	Y	R	R	S	S	S	R	S	S	S	S	S	S	R	S
138	MADHAV	60	IPD	MALE		I-18026	4-Jul	SB PATIL	URO	BPH			R	R	Y	R	R	S	R	R	R	S	S	S	R	R	R	R	S
139	SUBHASH	64	IPD	MALE		I-1335	10-Jul						R	R	Y	S	S	S	R	R	R	S	S	S	R	R	S	R	S
140	SHIVANN/	23	OPD	MALE		O-208272	11-Jul	BASAVAR	SUR	ABCESS			S	R	Y	R	S	S	S	R	R	S	S	S	S	R	S	R	S
141	RASHMI	30	OPD	FEMALE		O-207604	10-Jul	KUNAL	ENT	TONSILITIS			R	R	Y	R	R	R	S	R	R	S	S	S	R	S	S	S	S
142	SANJAPP/	58	IPD	MALE		I-19434	15-Jul	KUNDARA	URO	STRICTURE URETHF			R	R	Y	R	R	S	R	S	R	S	S	S	R	R	R	R	S
143	KHADIRA	68	IPD	MALE		I-19480	15-Jul	KOTENNA	SUR	PERIANAL ABCESS			R	R	Y	R	I	S	R	S	R	S	S	R	S	R	S	S	R
144	ARJUN	40	IPD	MALE		I-19300	16-Jul	HARIDAS	SUR				R	R	Y	R	R	R	S	S	R	S	S	R	R	R	S	S	S
145	RUKMINI	78	IPD	FEMALE		I-214703	17-Jul	METAN	SUR	LEG ULCER			R	R	Y	R	R	S	R	R	S	R	S	R	S	S	R	R	S
146	KASHIRA	28	IPD	MALE		I-18535	17-Jul	KOTENNA	SUR	BURNS			S	S	N	R	R	S	R	R	S	S	S	R	S	S	R	R	S
147	GAVAN	50	IPD	MALE		I-20604	26-Jul	KOTENNA	SUR	CELLULITIS			R	R	Y	S	S	S	S	R	S	S	S	R	S	S	S	S	S
148	YASMINE	11	IPD	FEMALE		I-20127	24-Jul	TEJASWI	SYR	SWELLING INNECK			R	R	Y	S	R	S	S	R	R	S	S	S	R	S	R	R	R
149	MAHADEV	63	OPD	MALE		O-222845	24-Jul	APARNA I	SKIN				R	R	Y	R	S	S	S	S	R	S	S	S	R	R	S	R	S
150	SONABAI	65	IPD	FEMALE		I-20071	25-Jul	MUDANUF	OBG	CA CERVIX			S	S	N	R	R	R	R	R	R	S	R	S	R	R	S	R	S

151	ADITYA	2	IPD	MALE		I-19736	27-Jul	TEJASWI	SUR				R	R	Y	R	R	S	R	R	R	S	R	S	R	R	S	R	S
152	SUNIL	18	IPD	MALE		I-20993	30-Jul	HEMANTH	SUR	NACROTIZING FASC			R	R	Y	R	S	S	R	R	R	S	S	S	S	R	S	R	S
153	SHIVARAJ	4	OPD	MALE		O-228178	30-Jul	VENKATE	ENT	CSOM			R	R	Y	R	S	S	S	R	R	S	S	S	S	R	S	S	S
154	DEEPAK	25	OPD	MALE		O-230441	31-Jul	NH KULK	ENT	TONSILITIS			S	S	N	R	R	S	S	R	R	S	S	S	S	I	S	S	S
155	HASHIRAM	65	IPD	MALE		I-19450	2-Aug	KOTENNA	SUR	PERIANAL ABCESS			R	R	Y	R	R	S	R	R	R	S	S	S	S	R	S	S	S
156	RAJENDR	58	IPD	MALE		I-21339	3-Aug	RASHMI					R	R	Y	S	R	S	S	R	R	S	S	S	S	S	S	S	S
157	SHIVA	25	OPD	MALE		O-23923	8-Aug	KARADI	ENT	CSOM			S	S	N	R	R	R	S	R	R	R	S	R	R	R	S	S	S
158	SANGAPP	75	IPD	MALE		I-19090	8-Aug	BADIGER	MED	DIABETIC FOOT			R	R	Y	R	R	R	R	R	R	S	S	S	R	R	R	S	S
159	BANDEPA	76	IPD	MALE		I-21867	8-Aug	SANTOSH	SUR	NACROTIZING FASC			S	R	Y	R	R	S	S	S	R	S	S	R	R	R	S	R	S
160	TIPPAMM	20	OPD	MALE		O-239384	8-Aug	SB PATIL	URO	PYONEPHROSIS			R	R	Y	R	R	R	R	R	R	S	S	S	R	R	R	R	R
161	BHAGYAV	45	IPD	MALE		I-20863	9-Aug			FRACTURE			R	R	Y	R	S	R	R	R	R	S	R	R	R	R	R	R	S
162	SUBHASH	42	IPD	MALE		I-22125	11-Aug	METAN	SUR	CARBUNCLE			R	R	Y	R	S	S	R	S	R	S	S	S	R	R	S	R	S
163	BASAVAR	50	OPD	MALE		O-243513	12-Aug	NAYAK	ORTHO				S	S	N	R	S	S	R	S	R	S	S	R	R	R	R	R	S
164	JAYASHR	45	IPD	FEMALE		I-21560	14-Aug	PATTANSI	ORTHO	GLUTIAL ABSCESS			S	S	N	R	S	S	S	R	S	S	S	R	S	R	S	S	R
165	SIDDAPP	45	IPD	MALE		I-17582	15-Aug	PATTANSI	ORTHO	SKIN GRAFT			R	R	Y	R	S	S	R	R	R	S	S	S	S	R	S	R	S
166	CHANRAN	70	OPD	MALE		O-240751	17-Aug			WOUND INF			R	R	Y	R	S	S	R	R	R	S	S	S	S	R	R	S	S
167	KASHIBAI	60	IPD	FEMALE		I-22681	17-Aug	KOTENNA	SUR	ABCESS			S	S	N	R	R	S	R	R	R	S	S	R	S	R	S	R	S
168	LAXMIBAI	75	OPD	FEMALE		O-249878	19-Aug	NH KULK	ENT	CSOM			R	R	Y	R	S	S	S	R	R	S	S	S	S	R	S	S	S
169	HANAMAN	48	OPD	MALE		O-23439	24-Aug	APARNA	SKIN	ABCESS			R	R	Y	R	R	S	S	R	S	S	S	S	R	R	R	S	R	S
170	BASAPPA	65	OPD	MALE		O-254076	22-Aug	MB PATIL	SUR	SWELLING INNECK			S	R	Y	R	S	S	R	S	R	S	S	S	R	R	S	R	S
171	SHANTA	22	IPD	FEMALE		I-23091	20-Aug	BASAVAR	SUR	BURNS			R	R	Y	R	R	R	R	R	R	I	S	S	R	R	S	S	S
172	MEHBOOB	25	IPD	MALE		I-23691	26-Aug	PATTANSI	ORTHO	AMPUTATION			R	R	Y	R	R	S	R	S	R	S	S	S	R	R	S	R	S
173	WALOKAR	65	OPD	MALE		O-258899	27-Aug	KUNAL	ENT	CSOM			R	R	Y	R	R	R	R	R	R	S	R	S	R	R	R	R	R
174	SANTOSH	35	IPD	FEMALE		I-23847	22-Aug	APARNA	SKIN	RVD			R	R	Y	R	R	R	S	S	R	S	S	S	S	R	S	R	R
175	MEHBOOB	21	IPD	MALE		I-23844	29-Aug	NAYAK	ORTHO	IMPLANT REMOVAL			R	R	Y	R	S	S	S	R	R	S	S	S	S	I	S	S	S
176	BAALU	60	IPD	MALE		I-23978	30-Aug	METAN	SUR	CELLULITIS			R	R	Y	R	R	S	S	R	R	S	S	S	S	R	S	R	S
177	MALLIKAR	50	IPD	MALE		I-23880	30-Aug	NANDI	ORTHO				S	S	N	R	R	S	S	R	S	S	S	R	S	R	S	S	S
178	ALLAPPA	75	IPD	MALE		I-23429	31-Aug	INAMDAR	SKIN	FURANCLE			R	R	Y	R	S	S	S	S	S	S	S	S	S	S	S	S	S
179	GANGAMM	50	IPD	FEMALE		I-24236	1-Sep	VIJAYA	SUR	CARBUNCLE			R	R	Y	R	S	S	S	R	R	S	S	S	R	S	S	S	R
180	RAGHAVE	32	OPD	MALE		O-267178	3-Sep	LATHADE	ENT	CSOM			R	R	Y	R	R	R	R	R	R	S	S	S	R	R	S	R	S
181	HUSSAINS	22	IPD	FEMALE		I-24430	2-Sep		SUR	CELLULITIS			R	R	Y	R	R	S	S	S	R	S	S	S	R	R	S	S	S
182	SHASHIKA	22	OPD	FEMALE		O-269984	6-Sep	KARADI	ENT	MASTOIDECTOMY			R	R	Y	R	R	S	S	S	R	S	S	S	R	I	S	S	S
183	GULABSI	50	IPD	MALE		I-25008	8-Sep	MULIMAN	MED	DIABETIC FOOT			R	R	Y	R	R	S	R	S	R	S	S	S	R	R	S	R	S
184	SUMNGAL	35	OPD	FEMALE		O-216010	7-Sep	VIJAYA	SUR				S	R	Y	R	R	S	R	S	S	S	S	S	R	R	R	R	S
185	ASHOK	45	IPD	MALE		I-24942	7-Sep	KOTENNA	SUR	PYUREA			R	R	Y	R	R	S	S	S	R	S	S	S	R	R	S	R	S
186	DODDAPP	48	IPD	MALE		I-25253	10-Sep	MB PATIL	SUR	URETERIC CALCULI			S	R	Y	R	S	S	S	S	R	S	S	S	R	S	S	S	S
187	PARVATI	70	IPD	MALE		I-25255	10-Sep	KOTENNA	SUR	ABCESS			S	S	N	R	R	S	R	S	R	S	S	S	R	R	S	R	S
188	PRAKASH	45	IPD	MALE		I-25267	10-Sep	HEMANTH	SUR				S	S	N	R	S	S	I	S	I	S	S	S	R	S	S	S	S
189	SHARAN	56	OPD	MALE		O0274302	10-Sep	HEMANTH	SUR	SCROTAL ABCESS			S	S	N	S	S	S	S	S	R	S	S	S	R	S	S	S	S
190	REVANSI	50	IPD	MALE		I-25277	10-Sep	HEMANTH	SUR	NECROTISING FACT			R	R	Y	R	S	S	S	S	R	S	S	S	R	S	S	S	S
191	VEERESH	36	OPD	MALE		O-276319	12-Sep	NH KULK	ENT	CSOM			R	R	Y	R	S	S	I	S	S	S	S	S	R	I	S	S	S
192	SHANTA	22	IPD	FEMALE		I-23091	13-Sep	MB PATIL	SUR	BURNS			R	R	Y	R	R	R	R	R	R	S	R	S	R	R	R	R	S
193	YESH	10	OPD	MALE		O-278688	14-Sep	GOBBUR	PED	URTI			R	R	Y	R	S	S	R	S	R	S	S	S	R	R	R	R	S
194	VEERPANG	22	IPD	MALE		I-25686	14-Sep		MED	PYLONEPHRITIS			R	R	Y	R	S	S	R	S	R	S	S	S	R	R	R	R	S
195	LAXMAN	1	IPD	MALE		I-24696	16-Sep	TEJASWI	SUR				S	R	Y	R	S	S	R	S	R	R	I	S	R	R	S	S	S
196	BIO SAVIT	3D	IPD	MALE		I-25676	17-Sep	GOBBUR	PED				S	S	N	R	R	R	R	R	R	S	S	S	R	R	R	R	R
197	RAMESH	34	IPD	MALE		I-25953	20-Sep	PATTANSI	ORTHO				S	S	Y	R	R	S	S	R	R	R	S	S	R	I	S	R	S
198	VIJAY	3	IPD	MALE		I-26481	21-Sep	NANDI	ORTHO				S	S	N	R	R	S	R	R	I	S	R	S	R	R	R	R	R
199	BANDEPP	76	IPD	MALE		I-21867	23-Sep	MB PATIL	SUR	ULCER			R	R	Y	R	R	R	R	R	R	S	R	R	R	R	R	R	S
200	SIDDRAM	55	IPD	MALE		I-25899	24-Sep	TEJASWI	SUR				R	R	Y	S	S	S	R	R	R	S	S	S	R	S	S	S	S

201	MAHADEV	28	IPD	MALE		I-26645	24-Sep	TEJASWI	SUR			R	S	N	R	R	S	R	S	R	S	I	R	R	S	S	S	S	S
202	GOURAM	75	IPD	FEMALE		I-26835	26-Sep	METAN	SUR	NECROTISING FACT		R	S	N	R	R	S	R	S	R	S	S	R	R	R	S	R	S	S
203	BASAVAR	35	IPD	MALE		I-26713	26-Sep	NAYAK	ORTHO	FRACTURE		R	S	N	R	S	S	R	S	R	S	S	S	S	R	R	S	S	S
204	AMOGH	9	IPD	MALE		I-27046	27-Sep		SUR	ABCESS		R	S	Y	R	R	S	R	S	R	S	S	S	S	R	S	R	S	S
205	SHIVAMM	62	IPD	FEMALE		I-27154	28-Sep	APARNA I	SKIN	CELLULITIS		R	R	Y	R	R	S	R	S	S	S	S	S	S	S	S	R	S	S
206	ABIJIT	9	OPD	MALE		O-302309	5-Oct		PED	TONSILITIS		R	R	Y	R	R	S	R	S	R	S	S	S	S	R	S	R	S	S
207	AMBAVV	65	IPD	FEMALE		I-29407	23-Oct	KOTENNA	SUR	PERIANAL ABCESS		R	R	Y	R	R	S	S	S	S	S	S	R	R	R	S	R	S	S
208	SHANTA	23	OPD	FEMALE		O-321369	24-Oct	MB PATIL	SUR	BURNS		R	R	Y	R	R	R	R	R	R	S	S	R	R	R	R	R	S	S
209	SHAKUNT	52	IPD	FEMALE		I-29828	26-Oct	VIJAYA	SUR	CARBUNCLE		R	S	N	R	R	S	R	S	R	S	R	S	R	S	S	R	S	S
210	ANIL	1	IPD	MALE		I-	27-Dec	METAN	SUR	ABCESS		R	S	N	R	R	S	S	S	R	S	S	S	S	R	S	I	S	S
211	SIDDAPP	65	OPD	MALE			26-Dec	METAN	SUR			R	S	Y	R	R	S	R	S	R	S	R	S	R	R	R	S	S	S
212	SHANTAV	55	IPD	FEMALE		I-4796	26-Dec	M S BIRA	MED	DM		R	R	Y	R	R	S	R	S	R	S	R	S	R	R	S	R	R	S
213	BALAPPA	80	IPD	MALE		I-4716	22-Dec	ANAND	MED			S	R	Y	R	R	S	R	R	R	S	R	S	R	R	R	R	R	S
214	POORAN	35	IPD	MALE		I-4463	21-Dec	MB PATIL	SUR	ABCESS		S	R	Y	R	R	S	S	S	R	S	S	S	R	S	S	R	S	S
215	SANTOSH	26	IPD	MALE		I--4717	24-Dec	MB PATIL	SUR	BURNS		R	R	Y	R	R	S	R	R	S	S	R	R	S	R	R	R	S	S
216	SHRISHA	45	IPD	MALE		I-4136	19-Dec	VIKRAM	SUR	ULCER		R	R	Y	R	R	S	R	S	R	S	S	S	R	I	S	R	S	S
217	ROOPINI	21	IPD	FEMALE		I-4014	17-Dec	RAMAKAN	SUR	ABCESS		R	R	Y	R	S	S	R	S	R	S	S	S	I	R	S	S	S	S
218	UDAY	26	OPD	MALE		O-36427	14-Dec	VIJAYA	SUR			R	R	Y	R	R	S	I	S	R	S	S	S	S	S	S	R	S	S
219	LAXMIBA	12	IPD	FEMALE		I-3592	10-Dec	AKKI	PED	PHERYNGITIS		S	S	N	R	R	S	R	S	R	S	R	S	R	R	R	R	S	S
220	SHASHK	33	IPD	FEMALE		I-3521	11-Dec		SUR	ABCESS		R	R	Y	R	R	S	R	S	R	S	R	S	R	R	R	S	S	S
221	APOORV	3	OPD	FEMALE		O-28153	29-Jan	NH KULK	ENT	CSOM		R	R	Y	R	S	S	R	S	S	S	S	R	R	R	S	S	S	S
222	RAJESHR	25	IPD	FEMALE		I-2432	25-Jan	VIJAYA	SUR	HYDRAADENITIS		S	R	Y	R	S	S	S	S	S	S	S	S	S	I	S	S	S	S
223	VIJAY	42	IPD	MALE		I-2447	21-Jan	VIJAYA	SUR			S	S	N	R	R	S	I	S	I	S	S	S	R	R	S	R	S	S
224	NEELA	22	OPD	FEMALE		O-16773	26-Jan		OBG			S	S	N	R	S	S	S	S	R	S	S	S	R	R	S	S	S	S
225	BASAVAR	30	IPD	MALE		I-2335	24-Jan	SS PATIL	SUR	BEDSORE		R	R	Y	R	R	S	R	R	R	R	S	S	R	R	S	R	S	S
226	PARVATI	68	IPD	FEMALE		I-622	22-Jan	TEJASWI	SUR			R	R	Y	R	R	S	R	S	R	R	S	S	R	R	R	S	S	S
227	REVANSI	60	IPD	MALE		I-1918	21-Jan	TEJASWI	SUR	DIABETIC FOOT		R	R	Y	R	S	S	R	S	S	S	S	S	S	S	S	S	S	S
228	CHAMPE	68	IPD	MALE		I-1719		VIJAYA	SUR	CELLULITIS		R	R	Y	R	R	S	R	S	R	S	I	I	R	R	S	R	S	S
229	LAXMIBA	12	IPD	FEMALE		I-5799	1-Feb	GOBBUR	PED	TONSILITIS		R	R	Y	R	S	S	R	S	S	R	R	S	S	R	S	S	S	S
230	LAXMIBA	22	IPD	FEMALE		I-3137	2-Jan		SUR			S	R	Y	R	R	S	R	S	R	R	R	R	R	R	R	R	S	S
231	SAMEER	6	OPD	MALE		O-32601	2-Jan		ENT	CSOM		S	R	Y	R	R	S	R	S	R	R	R	S	R	R	R	R	S	S
232	FATIMA	36	IPD	FEMALE		I-3160	2-Feb	KOTENNA	SUR	FOOT ABCESS		S	S	N	R	S	S	S	S	R	S	S	S	R	R	R	S	R	S
233	CHANNAP	65	IPD	MALE		I-3396	4-Feb		SKIN	ACTENIC RETUCUL		S	S	N	R	S	S	R	R	R	R	R	S	R	S	R	S	S	S
234	PRAJWAL	54	IPD	MALE		I-4121	11-Feb	HEMANTH	SUR			S	S	N	R	R	S	R	S	R	R	R	R	R	R	R	R	S	S
235	JAMES	8	IPD	MALE		I-4104		HEMANTH	SUR			S	S	N	R	R	S	R	S	R	R	R	R	R	R	R	S	S	S
236	GINDAPP	28	IPD	MALE		I-3567	17-Feb	METAN	SUR	FOURNERS GANGR		S	S	N	R	R	R	R	R	R	R	S	R	R	R	R	R	S	S
237	SHANTAG	60	IPD	MALE		I-4528	17-Feb		ORTHO	ABCESS		S	S	N	R	R	S	R	S	S	R	S	R	R	S	R	S	S	S
238	SACHIN	1	IPD	MALE		I-4368	14-Feb		ORTHO			S	S	N	R	R	S	R	S	S	R	R	S	R	R	R	R	S	S
239	KURSHEE	58	IPD	FEMALE		I-445	14-Feb		SUR	DIABETIC FOOT		S	S	N	R	R	S	R	S	R	R	R	S	R	R	R	R	S	S
240	NEELAKK	40	IPD	FEMALE		I-1481	21-Jan	METAN	SUR	NECK ABCESS		S	S	N	R	S	S	S	S	R	S	S	S	S	S	S	S	S	S
241	ANAND	35	IPD	MALE		I-2019	21-Jan		SUR	HAND INJURY		R	R	Y	R	R	S	R	S	R	S	S	R	R	R	S	S	S	S
242	SARASW	68	IPD	FEMALE		I-1758	19-Jan	VIJAYA	SUR	DIABETIC FOOT		R	R	Y	R	S	S	S	S	R	S	S	S	R	R	S	S	S	S
243	PUNDALI	45	IPD	MALE		I-1672	18-Jan	KOTENNA	SUR	CELLULITIS		R	R	Y	R	S	R	R	S	R	S	S	S	S	R	S	S	S	S
244	ASHOK	44	OPD	MALE		O-16713	18-Jan	NH KULK	ENT	ASOM		S	R	Y	R	R	S	R	S	R	S	R	S	R	R	R	R	S	S
245	VARSHA	2	IPD	FEMALE		I-869	10-Jan	MB PATIL	SUR	ABCESS		R	R	Y	R	S	S	R	S	R	S	R	S	R	R	S	S	S	S
246	ISMAIL	48	IPD	FEMALE		I-3957	10-Jan	KUNAL	ENT	NASAL ABCESS		S	R	Y	R	S	S	R	S	R	S	R	S	R	R	S	S	S	S
247	BASAMM	25	OPD	FEMALE		O-3388	8-Feb		SKIN			R	R	Y	R	R	S	R	S	R	R	R	R	R	R	R	R	S	S
248	VIKAS	6	OPD	MALE		O-51384	18-Feb	NH KULK	ENT	CSOM		R	R	Y	R	R	S	R	S	R	R	R	R	R	R	R	R	S	S
249	RAJU	12	OPD	MALE		IO-51947	18-Feb	MALIPATI	ENT	SWELLINL		S	S	Y	R	R	S	R	S	R	R	R	R	R	R	R	R	R	S
250	SHRIDEV	46	IPD	FEMALE		I-19415	21-Feb		OBG			S	S	N	R	R	S	S	S	R	S	R	S	R	R	S	S	S	S

251	SHRIDHAI	44	IPD	MALE		I-5081	21-Feb		SUR	CELLULITIS		S	S	N	R	R	S	S	S	R	R	R	S	R	R	R	R	S	S
252	HONNAPF	80	IPD	MALE		I-1793	20-Feb	VIJAYA	SUR	BEDSORE		R	R	Y	R	R	S	R	R	R	S	R	S	R	R	R	R	S	S
253	PRADIP	12	OPD	MALE		OI-5381	24-Feb		PED	EAR DISCHARGE		R	R	Y	R	S	S	R	S	R	S	R	S	R	R	S	S	S	S
254	ASHOK	38	IPD	MALE		I-5715	28-Feb					S	S	N	R	S	S	R	S	R	S	S	S	R	S	R	S	S	S
255	ARVIND	22	IPD	MALE		I-5829	1-Mar	DEVARM/	MED	BEDSORE		S	S	Y	R	R	R	R	R	R	S	R	R	R	R	R	R	S	S
256	SANGEEN	30	OPD	FEMALE		O-67704		KARADI	ENT	CSOM		S	S	N	R	R	S	R	R	R	S	S	S	R	R	R	R	S	S
257	AIYAPPA	87	IPD	MALE		I-5883	2-Mar	VIJAYA	SUR	DIABETIC FOOT		S	S	N	R	S	S	R	S	R	S	R	S	S	R	S	S	S	S
258	APPASA	78	IPD	MALE								S	S	N	R	R	S	R	S	R	S	S	S	R	R	R	S	S	S
259	BHEEMA	80	IPD	MALE		I-6011	7-Mar	BADIGER	MED	ULCER		S	S	N	R	R	S	R	S	R	S	R	S	R	R	R	R	S	S
260	KAVITA	20	OPD	FEMALE		O-76014	11-Mar		OBG			R	R	Y	R	S	S	R	S	S	S	R	S	R	R	R	S	S	S
261	MARUTI	12	IPD	MALE		I-6870		TEJASWI	SUR	CELLULITIS		R	R	Y	R	S	S	R	S	R	S	R	S	R	R	S	S	S	S
262	VALMIKI	61	IPD	MALE		I-3553	14-Mar	METAN	SUR			R	R	Y	R	S	S	R	S	R	S	S	S	R	S	S	S	S	S
263	VALABAV	60	IPD	MALE		I-6001	7-Mar	KUNDARA	URO	PROST ABCESS		S	S	N	R	R	S	S	S	R	S	S	S	R	S	S	S	S	S
264	BASAVAF	60	IPD	MALE		I-6115	5-Mar		SUR	ULCER		S	S	N	R	R	R	S	S	R	S	R	S	R	R	R	S	S	S
265	MOHSIN	6	IPD	MALE		I-7312	14-Mar	KOTENNA	SUR			S	S	N	R	S	S	R	S	R	S	R	S	R	R	S	S	S	S
266	NAMDEB	30	IPD	MALE		I-7221	14-Mar	MB PATIL	SUR			S	S	N	R	R	S	R	S	S	S	R	S	S	R	S	S	S	S
267	RAMESH	50	OPD	MALE		O-92404	18-Mar	KARADI	ENT	CSOM		S	S	N	R	R	S	R	S	R	S	S	S	R	R	S	R	S	S
268	ISMAIL	70	OPD	FEMALE		O-85695	18-Mar	KARADI	ENT	ABCESS		S	S	N	S	R	S	R	S	S	S	S	S	S	S	S	R	S	S
269	SAINATH	1	OPD	MALE		O-74123	19-Mar	KARADI	ENT	ASOM		S	S	N	R	R	S	R	S	R	R	R	R	R	R	S	R	S	S
270	SANMATI	22	IPD	FEMALE		I-7780	20-Mar	METAN	SUR	ABCESS		S	S	N	R	S	S	R	S	R	S	R	S	R	R	R	S	R	S
271	LALITA	13	IPD	FEMALE		I-8025	22-Mar		SUR	CELLULITIS		S	S	N	R	R	S	R	S	S	S	R	S	R	R	S	S	S	S
272	AMOGH	4	IPD	MALE		I-8442	26-Mar		ENT	ABCESS		S	S	Y	R	R	S	R	S	R	S	R	R	R	S	S	S	S	S
273	BHEEMR/	52	IPD	MALE		I-8581	26-Mar	TEJASWI	SUR	CELLULITIS		S	S	N	R	R	S	R	R	S	S	R	S	S	R	R	S	S	S
274	SUNANDA	50	IPD	FEMALE		I-8306	26-Mar	TEJASWI	SUR	ABCESS		S	S	N	R	R	S	R	R	R	R	R	R	R	R	S	S	S	S
275	RAMAPP/	48	IPD	MALE		I-8887	28-Mar	MB PATIL	SUR			S	S	N	R	R	S	R	R	R	R	R	R	R	R	R	R	S	S
276	RADHIKA	30	IPD	FEMALE		I-8559	26-Mar	METAN	SUR	ABCESS		S	S	N	R	R	R	S	R	R	R	S	R	S	R	R	R	S	S
277	RADHABA	60	OPD	FEMALE		O-100395	1-Apr	KARADI	ENT	CSOM		S	S	N	R	S	S	R	S	R	S	R	S	S	R	S	S	R	S
278	RACHPP/	55	IPD	MALE		I-9402	3-Apr		SKIN			S	S	N	R	R	S	R	R	R	R	R	R	S	R	R	R	S	S
279	SHRIDEV	27	OPD	FEMALE		O-103863	4-Apr	KOTENNA	SUR	ABCESS		S	S	N	R	S	S	R	S	R	R	R	S	R	R	R	S	S	S
280	JAYASHR	27	IPD	FEMALE		I-9277	4-Apr		SUR	PYLONIDAL SINUS		S	S	N	R	R	R	R	R	R	S	R	R	R	R	R	S	S	S
281	GAJANAN	47	IPD	MALE		I-9539	4-Apr	KOTENNA	SUR			R	R	Y	R	R	R	R	R	R	R	R	R	R	R	R	R	S	S
282	LALITA	40	IPD	FEMALE		I-9584	5-Apr	KOTENNA	SUR	ABCESS		S	S	N	R	S	S	R	S	R	R	R	R	R	R	R	S	S	S
283	GURABAS	55	IPD	MALE		I-9931	8-Apr	KOTENNA	SUR	DIABETIC FOOT		S	S	N	R	R	S	R	S	R	S	S	S	R	S	S	R	S	S
284	ASMA	25	IPD	FEMALE		I-10648	15-Apr	TEJASWI	SUR	ABCESS		R	R	Y	R	R	S	R	S	R	R	R	R	R	R	R	R	S	S
285	MOUSABI	45	IPD	FEMALE		I-10729	16-Apr	SS PATIL				S	S	Y	R	R	S	R	S	R	S	R	R	R	R	R	S	S	S
286	PARVATI	39	IPD	FEMALE		I-10732	16-Apr		OBG			S	S	N	R	R	S	R	S	R	S	R	S	R	R	R	S	S	S
287	SAMARTH	1	IPD	MALE		I010394	12-Apr	KOTENNA	SUR	ABCESS		R	R	Y	R	R	S	R	S	R	S	R	R	S	S	S	S	S	S
288		40	IPD	FEMALE		I-10378	12-Apr	KOTENNA	SUR	ABCESS		S	R	Y	R	R	S	R	S	R	S	R	S	R	S	S	R	S	S
289	SUVARNA	32	IPD	FEMALE		I-11042	18-Apr		SUR	ABCESS		R	R	Y	R	R	R	R	R	R	S	R	R	R	R	R	S	R	R
290	VIJAYA	48	IPD	FEMALE		I-11539	23-Apr	MB PATIL	SUR			R	R	Y	R	R	S	R	S	R	S	R	S	R	R	S	R	S	S
291	SUSHILAI	55	IPD	FEMALE		I-12709	2-May	INAMDAR	SKIN			S	S	N	R	R	S	R	S	R	S	R	R	R	R	S	S	S	S
292	ISHARAB	40	IPD	FEMALE		I-12847	3-May	AJIT	SKIN			S	S	N	S	S	S	R	S	R	S	S	S	R	S	S	S	S	S
293	BAABUSA	32	IPD	MALE		I-12977	5-May	KOTENNA	SUR	NACROTIZING FASC		S	S	N	R	R	S	R	S	R	S	S	S	R	R	R	S	S	S
294	TEJA	32	IPD	MALE		I-12912	5-May	KOTENNA	SUR	ABCESS		S	R	Y	R	R	S	R	S	R	S	R	S	R	R	R	R	S	S
295	VASUMA1	50	IPD	FEMALE		I-10786	8-May	TEJASWI	SUR	ABCESS		S	R	Y	R	R	S	R	S	R	S	R	S	R	S	S	R	S	S
296	GOUDAPF	65	OPD	MALE		O-12527	10-May	INAMDAR	SKIN	DERMATITIS		S	S	N	R	R	R	R	S	R	S	R	S	R	S	S	S	S	S
297	BALGOUDA		OPD	MALE		O-149240	12-May		ORTHO			S	S	N	R	S	S	R	S	S	S	R	R	S	S	R	S	S	S
298	GEETHA	21	IPD	FEMALE		I-23983	13-May	HEMANTH	SUR	CELLULITIS		R	R	Y	R	R	S	R	S	S	S	R	S	R	S	S	S	S	S
299	VIJAY KU	18	IPD	MALE		I-12901	7-May	MS BIRAD	MED	CEREBROVASCULA		S	R	Y	R	S	S	R	S	R	S	R	S	R	R	R	S	S	S
300	GURUBAI	60	IPD	FEMALE		I-13063	6-May	NAMAGOI	MED	KOCH		S	S	N	R	S	S	R	S	R	S	S	S	R	R	S	R	S	S

301	MONAPPA	60	IPD	MALE		I-13219	9-May		SUR			R	R	Y	R	R	S	R	R	R	R	R	R	R	R	R	S	S
302	shivama	50	IPD	MALE		26613	20-Aug	KOTENNA	SUR	CHYLOCOEL		S	S	N	R	R	S	S	S	S	S	S	S	S	S	R	R	S	S
303	RAFIQUE	60	IPD	MALE		26582	16-Aug	M S BIRAI	MED	COUGH		S	S	N	R	R	S	R	R	R	S	S	S	R	R	R	R	S	S
304	KASHBAI	35	IPD	FEMALE		26705	16-Aug	KOTENNA	SUR	ABCESS		S	S	N	R	R	S	R	R	R	R	S	S	R	R	R	R	S	S
305	ANTA	20	IPD	FEMALE		26783	18-Aug		OBG	WOUND GAPING		S	S	N	R	S	S	R	S	R	S	S	S	R	R	R	S	S	S
306	KENCHAPPA		OPD	MALE		124916	17-Aug	TEJASWI	SUR	CELLULITIS		S	S	N	R	R	S	R	S	S	S	S	S	S	R	R	R	S	S
307	GURUBAS	55	IPD	MALE		26709	16-Aug	KOTENNA	SUR	NECRO FASCITIS		S	S	N	R	R	R	R	R	S	R	R	S	S	R	R	R	S	S
308	NAGANGO	68	IPD	MALE		25495	17-Aug	M B PATIL	SUR	FISTULA		S	S	N	R	R	R	R	R	S	R	R	R	S	R	S	R	S	S
309	PUNDAPP	55	IPD	MALE		26808	18-Aug	TEJASWI	SUR	DUODINAL PERFOR		S	S	N	R	R	S	R	R	S	S	R	S	S	R	R	R	R	R
310	GANAPAT	65	IPD	MALE		26986	19-Aug		SUR	ULCER		R	R	Y	R	R	R	S	R	R	S	R	R	S	R	S	R	S	S
311	SIDDAPP	45	IPD	MALE		26988	19-Aug		SUR	GLUTIAL ABCESS		R	R	Y	R	S	S	R	S	S	S	R	R	R	R	R	S	S	S
312	LAXMI	60	OPD	FEMALE		26641	22-Aug	KOTENNA	SUR	DIABETIC FOOT ULC		S	S	N	R	R	R	R	R	S	R	R	R	S	R	R	R	S	S
313	ASTHA	10	OPD	FEMALE		298280	21-Aug		ENT	OTOMYCOSIS		S	S	N	S	S	S	S	S	S	S	S	S	S	S	R	S	S	S
314	MAHADEV	50	OPD	FEMALE		308615	21-Aug		OBG	UTI		S	S	N	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
315	MADAPPA	82	OPD	MALE		309199	21-Aug	KARADI	ENT	EAR DISCHARGE		R	R	Y	R	R	S	S	S	R	S	S	S	S	R	S	R	S	S
316	SUBHAS	65	IPD	MALE		27296	21-Aug	S B PATIL	URO	CALCULUS		R	R	Y	R	R	S	R	R	R	R	S	S	R	R	R	R	S	S
317	SHASHIK	28	OPD	FEMALE		308227	20-Aug		OBG	WHITE DISCHARGE		R	R	Y	R	R	S	R	S	R	S	S	S	S	S	R	R	S	S
318	RAMESH	35	IPD	MALE		26965	20-Aug	HEMANTH	SUR			R	R	Y	R	R	S	S	S	R	S	R	S	R	R	S	R	S	S
319	MANOHAR	35	IPD	MALE		20957	20-Aug		SUR	ULCER		R	R	Y	R	R	S	R	S	R	R	S	S	R	R	S	R	S	S
320	MAHANAN	35	IPD	FEMALE		26894	20-Aug	HEMANTH				S	S	N	R	S	S	R	S	S	R	S	S	R	R	S	S	S	S
321	RAMA	65	OPD	MALE		307117	20-Aug		ENT	CSOM		S	R	Y	R	S	S	R	S	S	S	S	S	S	S	S	S	S	S
322	SHANTA	55	OPD	FEMALE		307395	20-Aug	JAJU	OBG	VEGINAL DISCHARG		S	S	N	R	R	S	R	R	R	S	S	S	R	R	S	R	S	S
323	KIRAN	16	IPD	MALE		19258	5-Jul	METAM	SUR	ULCER		S	S	N	R	S	S	R	S	R	S	S	S	R	R	S	S	S	S
324	UMESH	6	IPD	MALE		19275	4-Jul	METAM	SUR	NECRO FASCITIS		S	S	N	R	S	S	S	S	R	S	S	S	R	S	S	S	S	S
325	ROHIT	5	IPD	MALE		20895	3-Jul	METAM	SUR	ABCESS		S	S	N	R	S	S	S	S	R	S	R	S	R	S	S	R	S	S
326	PARASHU	2	OPD	MALE		240335	3-Jul		SKIN	PSORIASIS		S	S	N	R	R	S	S	S	R	S	S	R	R	S	S	R	S	S
327	AVVA	44	OPD	FEMALE		255660	14-Jul	BIDRI RC	MED			R	R	Y	R	S	S	S	S	R	S	S	R	S	S	R	S	S	S
328	SHIVAPP	35	IPD	MALE		22200	13-Jul	L S PATIL	MED			R	R	Y	R	R	S	R	S	R	R	S	S	R	S	R	R	S	S
329	RACHAV	45	IPD	FEMALE		23201	20-Jul		SKIN	BULLOUS PEMPHIG		S	S	N	R	R	S	R	S	R	R	R	S	R	S	R	R	S	S
330	PRAJWAL		OPD	MALE		263173	20-Jul	TEJASWI	SUR	SWELLING		R	R	Y	R	R	S	R	S	R	S	S	R	R	R	R	R	S	S
331	LAXMI	25	IPD	FEMALE		23161	20-Jul	BARADOL		BREAST LUMP		R	R	Y	R	R	S	R	R	R	S	S	S	S	S	S	R	S	S
332	ASHA	33	OPD	FEMALE		263396	20-Jul		OBG	VEGINAL DISCHARG		R	R	Y	R	S	S	S	S	S	S	S	S	S	S	R	S	S	S
333	KANAKAM	9	IPD	FEMALE		21826	16-Jul	NANDI	ORTHO	SWELLING		R	R	Y	R	R	S	S	S	R	S	S	S	R	S	S	R	S	S
334	SHARANA	65	IPD	FEMALE		22209	15-Jul	NANDI	ORTHO	SWELLING		R	R	Y	R	S	S	S	S	R	S	S	S	R	S	S	S	S	S
335	SHIVABAI	38	OPD	FEMALE		263840	16-Jul		OBG	DISCHARGE		S	S	N	S	R	R	R	S	R	S	R	R	R	S	R	R	S	S

336	MADHU	45	IPD	MALE		22410	16-Jul	M S BIRAI		MED	UTI			S	S	N	R	R	S	S	R	R	R	S	R	R	S	R	S	S
337	MEHBOOB	46	IPD	MALE		22442	16-Jul			SUR	BURN			S	S	N	S	S	S	S	S	S	S	S	S	S	S	S	S	S	S
338	SAVALCH	75	IPD	MALE		6509	27-Feb	M S BIRAI		MED	COPD			S	S	N	R	R	S	S	S	R	S	R	S	R	R	R	S	R	R
339	KALLAVV	45	IPD	FEMALE		5867	26-Feb			ORTHO	BRODY'S ABSCESS			S	S	N	R	S	S	S	S	S	S	S	S	R	S	R	S	S	S
340	KIRAN	10	OPD	MALE		78783	29-Feb			ENT	EAR DISCHARGE			S	S	N	S	R	S	S	S	R	S	S	S	R	R	R	R	R	R
341	BANUDAS	50	IPD	MALE		6660	29-Feb			SUR	DIABETIC FOOT			S	S	N	S	R	R	S	R	R	S	R	S	R	S	R	R	R	R
342	NOORJAH	70	IPD	FEMALE		6278	29-Feb			ORTHO				S	S	N	R	R	S	R	R	S	R	R	R	R	S	R	R	S	S
343	MANICKC	55	OPD	MALE		41289	11-Feb	MULIMANI		MED	DIABETIC FOOT			S	S	N	R	R	S	S	S	R	R	S	S	R	S	R	S	R	R
344	CHANDAN	20	IPD	MALE		4798	11-Feb	M B PATIL		SUR				R	R	Y	R	R	S	S	S	R	R	S	S	R	R	S	S	R	R
345	BHEEMA E	54	IPD	FEMALE		4607	10-Feb	KUNDARG		URO	CALCULI			R	R	Y	R	S	R	R	R	R	R	R	R	R	R	R	R	S	S
346	MAULASA	36	OPD	MALE		75298	26-Feb	VIJAYA P		SUR	ABCESS			S	S	N	R	S	S	S	S	S	S	S	S	R	R	R	S	S	S
347	APPANNA	45	IPD	MALE		5910	25-Feb			ORTHO	FRACTURE			S	S	N	R	S	S	S	S	S	S	S	S	S	S	R	S	S	S
348	PARVATA	70	IPD	FEMALE		6385	25-Feb			SKIN	PAMPHIGUS			S	S	N	R	S	S	R	S	R	S	S	S	S	R	R	S	S	S
349	BHAVANI	11	OPD	FEMALE		72805	24-Feb			ENT	CSOM			S	S	N	R	S	S	S	S	S	S	S	S	S	R	S	S	S	S
350	MAHADEV	2	IPD	MALE		6376	25-Feb			SUR	ABCESS			S	S	N	R	S	S	R	S	R	S	R	R	R	S	R	S	S	S
351	VINAY	14	IPD	FEMALE		7246	24-Feb			ENT	CSOM			S	S	N	R	R	S	R	S	R	S	S	S	R	R	R	S	R	R
352	JAYASHR	35	IPD			4629	23-Feb			SUR	BURNS			R	R	Y	R	R	S	S	R	R	R	R	S	R	S	R	R	R	R
353	JYOTHI	23	OPD	FEMALE		69715	22-Feb			OBG	WOUND			S	S	N	R	R	S	S	S	R	R	S	S	R	S	S	R	R	R
354	HANMANT	25	IPD	MALE		5985	22-Feb	TEJASWI		SUR	ABCESS			S	S	N	R	R	S	R	S	S	R	S	R	R	S	S	S	R	R
355	RENUKA	30	IPD	FEMALE		6177	22-Feb			SUR	ABCESS			S	S	N	R	S	S	R	S	S	R	S	S	R	R	S	S	S	S
356	AMOGSID	52	IPD	MALE		5105	14-Feb			SUR	CELLUTIS			S	S	N	R	S	S	S	S	R	R	S	R	R	R	R	S	S	S
357	ARIFA	20	OPD	FEMALE		60895	15-Feb			OBG	WOUND			S	S	N	R	R	R	S	S	R	R	R	S	R	S	S	S	S	S
358	MAHAJABI		IPD	FEMALE		5294	16-Feb	DAYANAN		SUR	ABCESS			S	S	N	S	S	S	S	S	S	S	R	S	R	S	R	S	S	S
359	SUNIL	4	IPD	MALE		4909	16-Feb	KOTTENN		SUR	ABCESS			R	R	Y	R	S	S	R	R	R	S	S	R	R	R	R	R	S	S
360	MUBARAK	45	IPD	MALE		5085	16-Feb	TEJASWI		SUR	PERITONOTIS			S	R	Y	R	S	S	S	S	R	S	S	S	R	S	R	S	S	S
361	SUCHITRA	3	IPD	FEMALE		5040	13-Feb	AKKI		PED	FEVER			S	R	Y	R	R	S	R	R	S	S	R	S	R	S	R	R	R	R
362	BHAGIRA	60	IPD	FEMALE		5395	16-Feb			MED				R	S	N	R	R	R	R	R	R	S	S	R	R	R	S	R	R	R
363	SANGANA	70	OPD	MALE		41587	18-Feb	METAN		SUR	DIABETIC FOOT			S	S	N	R	R	S	R	S	R	S	S	S	R	R	S	S	R	R
364	SHANKAR	72	OPD	MALE		5461	18-Feb			SUR	CELLUTIS			S	S	N	R	R	S	S	S	S	S	S	S	R	R	S	S	S	S
365	KRISHNA	35	IPD	MALE		5199	18-Feb			SUR	ABCESS			S	S	N	R	S	S	S	S	S	S	R	S	R	S	S	S	S	S
366	DEEPA	10	IPD	FEMALE		5732	19-Feb			SKIN	HKD			S	S	N	R	R	S	S	S	S	S	S	S	R	R	S	R	S	S
367	SANATH	18M	IPD	MALE		5525	22-Feb	S V PATIL		PED	ABCESS			S	R	Y	R	S	S	S	S	R	R	R	S	R	R	S	S	S	S
368	DHARMA	6	IPD	MALE		4981	20-Feb			URO	TURP			R	R	Y	R	R	R	R	R	R	R	R	R	R	R	R	S	R	R
369	PINTU	30	IPD	MALE		5735	20-Feb			MED	COUGH			S	S	N	R	S	R	R	R	R	S	S	S	R	S	S	R	S	S
370	SHARADA	5M	IPD	FEMALE		5932	21-Feb			PED	ENCEPHALITIS			S	S	N	R	S	S	R	R	S	R	S	S	R	S	S	S	S	S
371	SHRISHA	30	IPD	MALE		6222	23-Feb			SUR	HYDROCOELE			R	R	Y	R	R	S	R	R	R	R	R	S	R	S	R	R	R	R
372	MUTALI	6	IPD	MALE		6326	24-Feb			SUR	ABCESS			S	R	Y	R	R	S	S	S	R	R	S	S	R	S	R	S	R	R
373	NOORSAA	47	IPD	MALE		6214	3-Feb	HEMANTH		SUR	DIABETIC FOOT			S	S	N	R	S	S	R	R	R	S	R	R	S	S	S	S	S	S
374	MEHAR	11	OPD	FEMALE		59355	13-Feb			ENT	CSOM			S	S	N	R	R	S	S	S	R	R	S	S	R	R	S	S	R	R
375	JAYASHR	38	OPD	FEMALE		59459	14-Feb			ENT	CSOM			S	S	N	R	R	S	S	S	S	R	S	S	S	R	S	S	R	R
376	RATHOD	49	OPD	MALE		58095	13-Feb			SKIN	FOLLICULLITIS			S	S	N	R	R	S	R	S	R	S	S	S	R	R	S	S	R	R
377	YELLAMM	1	IPD	FEMALE		4123	13-Feb	AKKI		PED	ITCHINF			S	S	N	R	R	S	S	S	S	R	S	S	R	R	S	S	R	R
378	SHAHIN	20	IPD	FEMALE		5085	14-Feb	TEJASWI		SUR	ABCESS			S	S	N	S	R	S	S	S	S	R	S	S	R	R	S	S	R	R
379	SACHIN	25	OPD	MALE		59820	13-Feb							S	S	N	R	S	S	S	S	S	R	S	S	R	S	S	S	S	S
380	RATHNU	80	IPD	MALE		5041	14-Feb	TEJASWI		SUR	SWELLING			S	S	N	R	S	S	S	S	R	R	S	S	R	R	S	S	S	S
381	ALLABAK	52	IPD	MALE		4447	10-Feb			SUR				S	S	N	R	S	S	S	S	R	R	S	S	R	S	R	S	S	S
382	BALAVVA	70	IPD	FEMALE		7479	4-Mar			SUR	CELLUTIS			S	S	N	S	S	S	S	S	R	S	S	S	R	R	R	S	R	R
383	YALLAPP	50	IPD	MALE		4577	MARCH	MULIMANI		MED	CELLUTIS			S	S	N	R	R	S	S	S	R	S	S	S	R	R	S	S	R	R