CLINICAL STUDY OF BACTERIAL PROFILE AND ANTIBIOTIC SENSITIVITY PATTERN OF ISOLATES IN MEDICAL ICU

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ABSTRACT

BACKGROUND:

The Intensive care unit is referred to a service for the patients who are in potentially recoverable condition who can benefit from intensive management. Studies need to be conducted on a regular basis in every icu of tertiary care hospitals, to know the local antibiogram which keeps changing due to evolving patterns of antibiotic resistance. This helps in improving clinician's decision of usage of appropriate antibiotic and therefore better recovery of the patient. This Study aimed to assess the incidence of bacterial infections and antibiotic sensitivity pattern of culture positive infections in ICU. As a result, it would serve as a guideline for initiating empirical antibiotic therapy, before culture reports are awaited.

METHODOLOGY:

This hospital-based longitudinal cross-sectional study was undertaken among patients hospitalised to KLE's DR. Prabhakar Kore hospital's ICU during a one-year study period. Organisms were isolated and their sensitivity patterns were assessed along with their clinical presentation and recovery.

RESULT:

In present study total of 417 positive cultures fulfilling inclusion criteria were included. Among them 62.8% were male patients and 37.2% were female patients with male predominance and mean age of patients being 55.80±17.81yrs of age and majority in the age group of 61 to 80 yrs of age. Overall among all the cultures most common organism isolated is Escherichia coli (24.94%) followed by klebsiella pneumonia(16.55%), coagulase negative staphylococcus

species(9.83%) and enterobacter species(9.35%) with predominance of gram negative infections. Analyzing the sensitivity and resistance patterns of the organisms isolated to various commonly used antibiotics, it is observed that maximum sensitivity is found with fosfomycin, followed by tigecycline, tetracycline, gentamycin, levofloxacin, vancomycin and amikacin. On the other hand maximum resistance is seen with amoxiclav which is approximately 100% followed by 1st and 2nd generation cephalosporins, ampicillin, norfloxacin, pencillin and clarithromycin.

CONCLUSION:

The increasing trend of antibiotic resistance among the hospitalized patients in the ICU setting is alarming. The need of hour is to generate the local empirical antibiogram, which will help in formulating and handling the patients with appropriate medication. This also will aid to regulate the extensive antimicrobial use among the clinicians.

Keywords: local empirical Antibiogram, antibiotic resistance, Klebsiella pneumonia, Escherichia coli, Staphylococcus species.

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ABBREVIATIONS

ARDS	ACUTE RESPIRATORY DISTRESS SYNDROME
BSI	BLOOD STREAM INFECTIONS
CAUTI	CATHETER ASSOCIATED URINARY TRACT INFECTION
CD	CLUSTER DIFFERENTIATION
CONS	COAGULASE NEGATIVE STAPHYLOCOCCUS AUREUS
CDC	CENTERS FOR DISEASE CONTROL AND PREVENTION
CHG	CHLORHEXIDINE GLUCONATE
CRBSI	CATHETER RELATED BLOODSTREAM INFECTIONS
ESBL	EXTENDED SPECTRUM BETA LACTAMASE
GPC	GRAM POSITIVE COCCI
GNB	GRAM NEGATIVE BACILLI
ICU	INTENSIVE CARE UNIT
MRSA	METHICILLIN RESISTANT STAPHYLOCOCCUS AUREUS
NHSN	NATIONAL HEALTH CARE SAFETY NETWORK SYSTEM
OR	ODDS RATIO
SOD	SELECTIVE OROPHARYNGEAL DECONTAMINATION
SDD	SELECTIVE DIGESTIVE DECONTAMINATION
UTI	URINARY TRACT INFECTION
VAP	VENTILATOR ASSOCIATED PNEUMONIA

INTRODUCTION

Antibiotic resistance is a major concern in critical care facilities across the globe. The widespread use of antibiotics has been associated to the spread of drug-resistant organisms in the ICU. The rate of resistance in the ICU is several times greater than in the general healthcare setting. ICU is a potential source of nosocomial infections and infected patients in ICU have mortality more than twice that of non-infected patients. Antimicrobial profile studies, currently ongoing have shown that bacteria that can cause nosocomial and community-acquired illnesses are becoming pan resistant to several antibiotic classes. As a result, this condition poses a clinical risk to humans.

The majority of bacterial antibiotic resistance mechanisms are acquired by the modification of target genes or the acquisition of plasmids harbouring resistance genes. These encoded genes may result in the generation of lytic enzymes, changes in membrane permeability, efflux mechanism, and spread of antibiotic resistance.

Knowing the information about bacterial profile and antibiotic resistance is of particular importance since there is considerable geographic variation from place to place in the rates of resistance to various antimicrobials. Knowing the antibiotic sensitivity of the organisms obtained in the ICU contributes in the building of an empirical antibiotic-policy in the ICU. This avoids overuse of broad spectrum antibiotics and prevent the emergence of drug resistant bacterial strains. This information may also help in adopting and implementing antibiotic stewardship programs. Antibiotic resistance is a major public-health issue throughout the world. This study acknowledge overuse and misuse of antimicrobials as a main issue for development of resistance, as well as the need to optimize the use of antimicrobials.

The shifting range of microbial pathogens in the hospital environment, as well as the widespread evolution of microbial resistance to antibiotic medications, highlight the importance of not just local surveillance systems, but also national and worldwide programmes to monitor resistance prevalence.

At present in our institution, empirical antibiotic treatment is based either on the studies conducted in western countries or is according to the treating physician's clinical experience which may or may not accurately reflect the resistance patterns prevalent in our institute. There is presently little information on organisms pattern and their antibiotic susceptibilities in ICU setup of tertiary care institutions in our country. with all the above backdrop, the current study was conducted over a one-year period to analyse, the clinical pattern of organisms causing infection in the ICU, along with their antibiotic sensitivity pattern.

OBJECTIVE

To study incidence of bacterial infections and antibiotic sensitivity pattern of culture positive infections in ICU.

REVIEW OF LITERATURE

The Intensive care unit is referred to a service for the patients who are potentially recoverable condition who can benefit from more detailed observation and intensive management, which is by providing the high dependency area where we should also take care of the diagnosis, prevention and treatment of multi-organ dysfunction.

Intensive care units (ICUs) account for less than 10% of total beds in most hospitals, yet they account for more than 20% of all nosocomial infections. ICU-acquired infections cause significant morbidity, death, and financial costs. In non-cardiac ICUs, infections and sepsis are the primary cause of death, accounting for 40% of all ICU costs.[1,2]

The targeted patients towards the Intensive care unit (ICU) are

- Cardiovascular system
- Respiratory system
- Alimentary system

Common causes for the ICU admissions

There are multiple causes for the admission into an intensive care unit in any given hospital. The most common reasons which need the treatment under the intensive management are

- Pneumonia
- Complicated Urinary tract infections
- Various types of Shock
- Septicemia
- Chronic or acute respiratory distress

- Renal failure
- Multi-organ dysfunction
- Acute Neurological conditions
- Bleeding or clotting disorders
- Nosocomial infections

Prevalence of infections in ICU

The prevalence of sepsis in intensive care units (ICUs) continues to grow, despite advancements in modern medicine and intensive care. In an international research of 1265 ICUs, infection was shown to be a strong independent predictor of death (odds ratio [OR] 1.51, p0.001). The chance of infection, in general, and infection by a resistant pathogen, in particular, rise as the patient's stay in the ICU becomes longer A variety of factors contribute to the high incidence of these infections in the ICU, as well as the poor patient outcomes that ensue from them.[3]

Patients in intensive care units (ICUs) are more chronic and have comorbid diseases, significant disturbance in physiologic systems, and are highly immune-suppressed when compared to general ward patients.

The high frequency of indwelling catheters among the patients in ICU, will contribute as a portal of entry for most of the infecting organism into the body fluid and the organs.

The use and maintenance of catheters involves regular interaction with health care staff, which predisposes to nosocomial pathogen colonisation and infection in this environment.

The equipments associated with proper maintenance, may also serve as reservoirs and vectors for the infective pathogens which may transmit horizontally from patients to patient.[4]

The multidrug resistance pathogens, such as the Methicillin resistant staphylococcus aureus (MRSA), acinetobacter baumannii, vancomycin resistant enterococci and enterobacteriaceae, extended spectrum beta-lactamases producing bacteria or carbapenemases producing bacteria, carbapenem resistant pseudomonas aeruginosa are the most commonly isolated ones with increasing frequency in ICUs.[3,5]

The infections caused by these resistant pathogens are difficult to treat and are associated with increased morbidity, mortality and economic burden.[6,7]

Although most studies of ICU-associated illnesses originate from developed nations, a multicenter prospective cohort surveillance study of 46 hospitals in south and central America, turkey, morocco and india[8] found that infection rates may be much higher in poor countries. The total infection rate was 14.7 % (22.5 infections per 1000 ICU days). For certain devices, the below mentioned prevalence rates were discovered.

- Catheter associated urinary tract infection (CAUTI) 8.9 cases per 1000 catheter days.
- Ventilatory associated pneumonia (VAP), in 24.1 cases per 1000 ventilator days.
- Catheter related bloodstream infections (CRBSI), in 12.5 cases per 1000 catheter days.

The results of 98 ICU's from Latin America, Asia, Africa, and Europe were published in a second research by the same multinational group. Despite the fact that device use was surprisingly similar to those reported from ICUs in the United States, In developing-world ICUs, the rates of device-associated nosocomial infection were much higher [9]

Infectious syndromes commonly seen in ICU

Infections linked with the supporting equipment that patients in the ICU frequently require are the most common and clinically significant infections acquired in the ICU. These include bloodstream infection from an intravascular catheter, pneumonia from a ventilator, and urinary tract infection from a catheter.

Catheter associated urinary tract infections:

The most prevalent nosocomial infection is urinary tract infection (UTI), which accounts for more than 40% of all nosocomial infections. While most catheter-associated UTIs may not result in substantial morbidity or death or raise hospital expenses, the cumulative effect of these infections is significant.[10,11]

Ventilator associated pneumonia:

In mechanically ventilated patients, ventilator-associated pneumonia is a lung infection that occurs 48 hours or longer after intubation. In the setting of endotracheal intubation and mechanical ventilation, nosocomial pneumonia is the second most prevalent hospital-acquired illness.[12]

Intravascular catheter related bloodstream infections:

Because of the necessity for hemodynamic monitoring and intravenous medications, arterial and central venous catheters are often utilized in critical care patients. Infections of the bloodstream caused by these catheters are frequent in ICUs and are linked to considerable morbidity and death. Furthermore, the economic burden of these infections on health care institutions in the United States was worsened in October 2008, when the

Centers for Medicare and Mediaid Services ceased reimbursing hospitals for catheter-related bloodstream infections.[13]

Prevalence of organisms resistant to drugs

The rate of resistance among bacterial infections collected in intensive care units has risen dramatically. A comparison of reports from the National Healthcare Safety Network System(NHSN) at the Centre for Disease Control and Prevention(CDC) in the United States from 1999 to 2006 to 2007 shows an increase in the prevalence of multidrug-resistant infections in ICUs in the United States.

- VRE from 24.7-33.3% of enterococci isolates
- MRSA from 53.5 to 56.2% of S. aureus isolates
- P.aeruginosa resistant to fluoroquinolones from 23.0 to 30.7% and to imipenem from 16.4 to 25.3%.
- Enterobacteriaceae resistant to 3rd generation cephalosporins, especially ESBL producers from 10.4 to 25% of Klebsiella pneumonia and 3.9 to 9.0 percent of Escherichia coli isolates.
- Acinetobacter baumannii resistant to carbapenems from 11 to 30%
- Enterobacteriaceae resistant to carbapenems from 0 to 8% of K.pneumoniae and 0 to 3% of E. Coli.

Broad-spectrum resistance among gram-negative bacteria is especially concerning since treatment choices are limited, and often no effective antimicrobial drug is available at all.[14]

Risk factors associated with infecting by resistant pathogen:

Certain characteristics contribute to increased selective pressure (leading to the emergence of multidrug-resistant organisms) and/or increased colonization pressure (leading to ineffective containment of these organisms) in ICUs, increasing the risk of infections with multidrug-resistant pathogens.[15–17] The following are some of the risk factors for resistant infections that have been documented from ICUs.[2,18–20]

- Old age
- Reduced cognition
- Long term hospitalization
- Frequent encounters with health care environments
- Health care personnel frequent contact
- Presence of any indwelling devices like central venous catheters, urinary catheters or ET tubes
- Recent surgery or other invasive procedures
- Antimicrobial therapy prior to the ICU admission

Several investigations and techniques have shown a link between past antibiotic use and infection with drug-resistant microbes. Antibiotic exposure has repeatedly been linked to the establishment of resistance to the same or a different class of antimicrobial agent in case-control studies.[21]

Outcomes related to multi-drug resistant infections :

Multidrug-resistant pathogen infections are linked to higher mortality, length of hospital stay, and healthcare expenditures. Patients with infections caused by multidrug-resistant organisms are frequently chronically or severely sick, and they are at risk of dying as a

result of underlying significant and complicated medical conditions. However, a variety of variables connected to the difficulty of selecting medicines for multidrug-resistant bacteria predispose to poor results on their own.[22–26]

Multidrug-resistant microorganisms are more likely to be resistant to empiric antibiotic regimens than susceptible organisms. As a result, commencement of suitable, effective antimicrobial therapy in the treatment of multidrug-resistant pathogens is frequently delayed.

Antimicrobial resistance frequently prevents the use of optimum "first-line" antimicrobial drugs, forcing the use of "second-line" antimicrobial medicines with lower bactericidal efficacy and/or poor pharmacokinetic and/or pharmacodynamic characteristics. Therefore, When "second line" medicines are used to treat a resistant pathogen, patients may have negative consequences.[27]

PREVENTION:

In intensive care units (ICUs), there are two primary types of methods to prevent the establishment and spread of multidrug-resistant bacteria: initiatives to enhance the efficacy and use of antimicrobial treatment (lowering selective pressure) and infection control measures (reducing colonization pressure)

Antibiotic utilization control policy:

Antibiotic stewardship initiatives (typically including doctors, infectious disease experts, and pharmacists) might meet the objective of decreasing infections caused by resistant bacterial strains in specific hospital settings such as the ICU. The initiatives encourage the effective and safe use of antimicrobial agents, review and advise formulary choices, and conduct antimicrobial usage education programs.[27–31] There is no role for rotating

antibiotic prescription practices by changing empiric regimens in an attempt to curb emergence of resistance.

Infection control measures:

Infection control techniques are the mainstay of strategies to avoid the evolution of multidrug-resistant organisms that do not entail changes in antibiotic use (which affects selective pressure) (which impact colonization pressure and patient-to-patient transmission). Resistant organism outbreaks have been controlled by paying close attention to some important daily activities. Hand hygiene, daily chlorhexidine washing, and installation of device-specific infection-prevention methods should be done on a regular basis for all ICU patients.[32–34]

Hand hygiene:

It is impossible to underestimate the value of proper hand hygiene. Alcohol-based hand hygiene is more successful than traditional soap and water in disinfecting hands; moreover, there is no need for a sink or towels, and alcohol foam is no more abrasive to hands than normal antiseptic soap and water. Because the foam does not inactivate C. difficile toxins or kill the spores themselves, it is not suited for hands that are visibly dirty or for health care professionals caring for patients with C. difficile infection (or other spore-forming organisms).[35,36]

Contact precautions, cohorting and dedicated staff:

Wearing a gown and gloves while entering a patient room and removing them before or shortly after leaving (but still near to the patient's immediate surroundings) may reduce the spread of multidrug-resistant bacteria such as MRSA, VRE, and carbapenem-resistant and ESBL-producing gram-negative organisms. When caring for ICU patients who have a

history of or are confirmed to have infection or colonization with resistant organisms, certain measures should be taken on a regular basis.

Decolonization or patients bathing:

Chlorhexidine bathing is required for all ICU patients on a daily basis. As many studies have shown, bathing patients in the ICU daily with chlorhexidine gluconate (CHG), an antiseptic with broad-spectrum activity against many organisms, is an effective method of reducing both hospital-acquired infections (such as bloodstream infections, urinary tract infections, surgical-site infections, and ventilator-associated pneumonia) and colonization with drug-resistant organisms.[37–43]

Digestive and oropharyngeal decontamination:

Decontamination of the gastrointestinal and oropharyngeal tracts has been advocated as a way to prevent infection in critically sick patients by decreasing microbial colonization at these locations.

In the Netherlands, a location with low baseline antimicrobial resistance, ICU patients treated with selective oropharyngeal decontamination (SOD) and selective digestive decontamination (SDD) showed modest mortality improvements. Outside of the Netherlands, however, these approaches have not gained general acceptance since no effect has been shown in ICUs with moderate to high levels of antibiotic resistance.

SOD and SDD have been shown in several trials to lower mortality and bacteremia rates in patients in ICUs with low levels of antibiotic resistance; nevertheless, the overall impact is small. Oropharyngeal decontamination with antiseptics (e.g., chlorhexidine), SOD with nonabsorbable antibiotics applied in the oropharynx, and SDD with nonabsorbable

antibiotics applied to the oropharynx and administered orally, with or without intravenous antibiotics are all examples of decontamination methods.

SOD decreased mortality relative to standard of care (no decontamination) or placebo (OR 0.85, 95 percent CI 0.74-0.97) in a meta-analysis of randomized studies assessing decontamination techniques in ICU patients. In comparison to standard of care (no decontamination) or placebo, SDD also reduced mortality (OR 0.73, 95 percent CI 0.64-0.84).[44]

In a randomized study including almost 11,900 ICU patients in the Netherlands to compare the incidence of antibiotic resistance with SOD vs SDD, the two treatments had identical death rates. Despite a somewhat larger rise in colonization with aminoglycoside resistant gram-negative bacilli are observed with SDD than SOD. over time, rates of rectal colonization with highly resistant bacteria were generally lower with SDD than SOD.[45]

Surveillance:

For the early detection and management of epidemic breakouts and endemic expansions of resistant bacteria, surveillance for infections with multidrug-resistant bacteria within the institution as a whole and within individual units is important. The occurrence and prevalence of multidrug-resistant bacteria (e.g., MRSA, VRE, and carbapenem-resistant Enterobacteriaceae) should be tracked, and the information should be presented to ICU nurses and doctors in an easy-to-understand format. Comparing data from different time periods for one ICU as well as other units within the same institution is beneficial.

MRSA surveillance cultures and extended barrier precautions (universal glove precautions while awaiting active surveillance culture findings) were not helpful in decreasing MRSA transmission in a cluster-randomized study including more than 9000 patients admitted to

18 intensive care units. Surveillance cultures have found a large subset of colonized individuals who were not otherwise detected, thus this discovery was unexpected.[46]

Device specific strategies:

Antimicrobial usage will be reduced and the risk of being infected or colonized with resistant bacteria will be reduced by preventing infections and reducing the length of hospital stay of patients. Infection rates, antibiotic consumption, and selective antibiotic pressure on resident bacteria all reduce when needless central venous catheter, bladder catheter, and endotracheal intubation are avoided. Clinicians should evaluate the necessity to maintain each of these intrusive devices in place on a daily basis.[47]

Furthermore, because indwelling devices are linked to many multidrug-resistant infections in the ICU, specific strategies for their placement and care, as well as additional adjunctive measures, are effective in reducing the risk of catheter-associated urinary tract infections, ventilator-associated pneumonia, and intravascular catheter-related bloodstream infection.

Environmental cleaning:

In the intensive care unit, as well as the rest of the hospital, environmental cleaning, disinfection, and sterilization are fundamental and crucial methods used to prevent or decrease infections. UV light sterilizing lamps and hydrogen-peroxide vapour decontamination devices are two innovative but still experimental approaches for environmental cleansing that might help future attempts to reduce colonization pressure. These new technologies, however, will not eliminate the need for thorough manual "terminal" cleaning, which should be set by a documented procedure in every ICU and checked on a regular basis.

Figure 1 : Control of infections in ICU

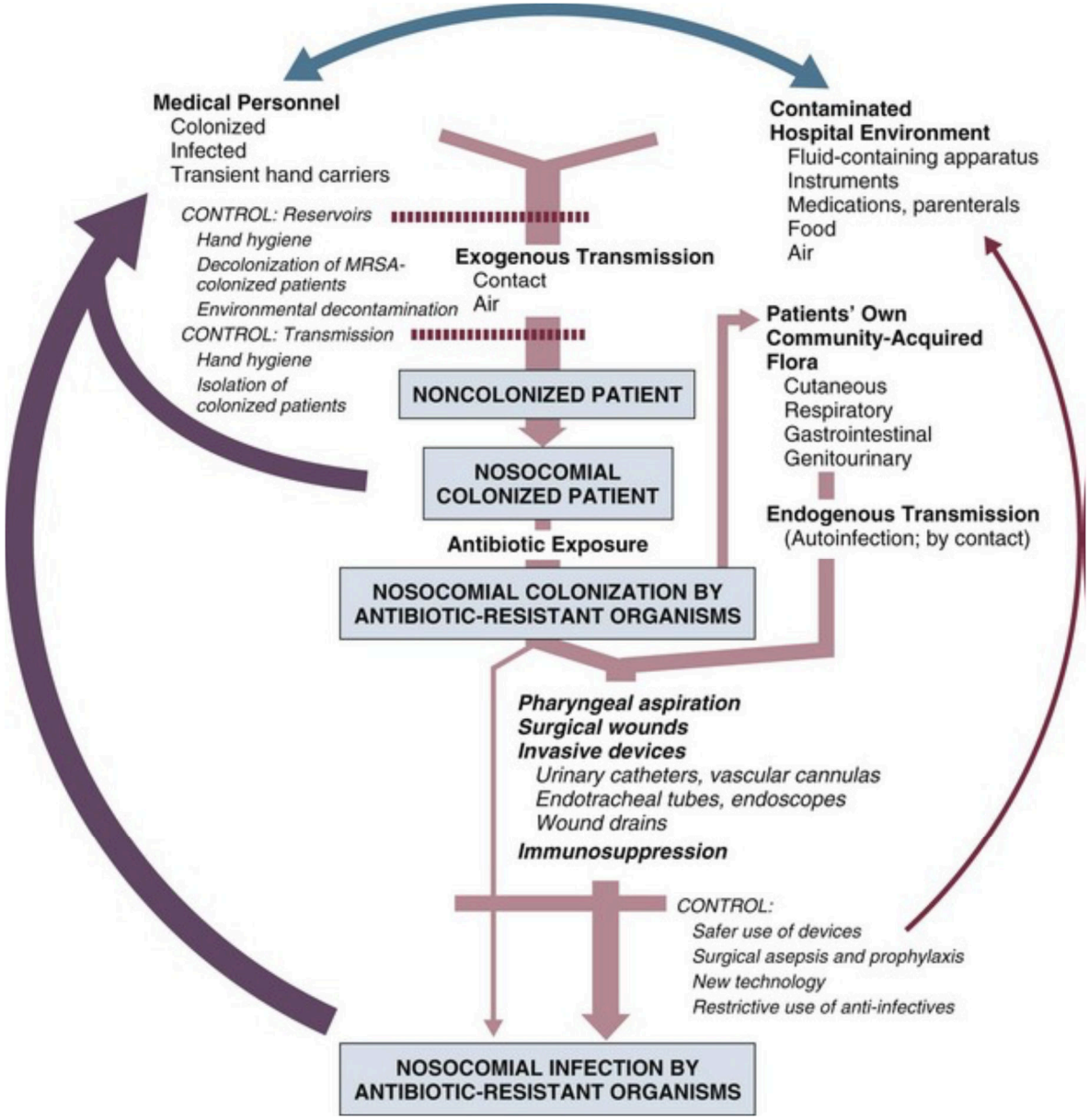

Table 1: universal recommendations for prevention of infections associated with intravascular catheter among adults

Health care workers training and education
To avoid intravascular catheter-associated infections, educate health care personnel about the indications for intravascular catheter usage, correct maintenance and correct insertion techniques, and also regarding infection prevention and control measures.
Hand hygiene
Observe proper hand hygiene either by washing hands with conventional antiseptic containing soap preparations, or with waterless alcohol-based foams or gels. The use of gloves does not eliminate the requirement for proper hand hygiene.
Aseptic techniques during catheter insertion and care
Maintain an aseptic procedure when inserting and caring for intravascular catheters. When inserting arterial or central venous catheters, use the most stringent barrier precautions.
Care of catheter site
Clean skin should be disinfected with a suitable antiseptic before catheter placement and at the time of dressing changes. A 2% chlorhexidine preparation is preferred, but there is no recommendation for its use in infants less than 2 months of age.
Cover the catheter site with sterile gauze or a sterile transparent semipermeable bandage.
On insertion sites, do not apply topical antibiotic ointment or cream (except for dialysis catheters).

Replacement of intravascular catheter Consider taking out any intravascular catheters that are no longer needed**.**
Replacement of infusion sets
In Every 7 days, administration sets, including secondary sets and add-on devices should be replaced (in the absence of a clinical indication for earlier replacement). Within 24 hours of starting the infusion, replace the tubing used to infuse blood, blood products, or lipid emulsions. Replace the tubing used to provide propofol infusions every 6 to 12 hours, depending on the manufacturer's instructions.
Parenteral fluids
Within 24 hours of hanging the solution, complete the infusion of lipid-containing solutions.
Within 12 hours of hanging the solution, complete the infusion of lipid emulsions alone.
Complete blood or other blood product infusions within 4 hours of hanging the blood.
Intravenous injection ports
Before using the system, clean the injection ports with 70% alcohol or an iodophor.

SIMILAR STUDIES SUBSTANTIATING THE IMPORTANCE OF SURVEILLANCE ANTIBACTERIAL PROFILE:

In a study by Singh AK et al., (2002) to assess the antibiotic sensitivity pattern among the common isolates from ICU. Total of 102 patients samples were collected. The most common isolates from respiratory tract infections were Klebsiella pneumoniae, Proteus spp., Escherichia coli, Staphylococci spp., and Acinetobacter spp. All Betalactam antibiotics and betalactam-betalactamase inhibitors were shown resistance by gram negative enteric bacilli. Ciprofloxacin and Ceftriaxone resistance was found to be 50-100 percent and 25-83.3 percent, respectively. Penicillin and tetracycline resistance was 100 percent, cotrimoxazole resistance was 80 percent, erythromycin and gentamicin resistance was 60 percent, and amikacin resistance was 40 percent. Except for gentamicin, Acinetobacter spp. were extremely resistant to most antibacterial drugs, while Pseudomonas spp. exhibited 75% resistance to it. The growing incidence of multidrug-resistant organisms in the ICU's is most likely as a result of a lack of a proper antibiotic policy, which results in the indiscriminate and protracted use of antimicrobial agents. [48]

A study done by Arora U et al, (2007) states that majority were gram positive bacteria while 47.33 % were gram negative bacilli. Staph aureus was the predominant organism 27.37% followed by CONS 20.16 %. Ampicillin (74.61 percent) and erythromycin (74.61 percent) showed the most resistance among gram-positive bacteria (69.67 percent). MDR bacteria made up the majority of the gram-negative bacteria (71 percent). Ampicillin (86.1%), cephalexin (68.07%), and piperacillin showed the highest levels of resistance (57.71 percent). Amikacin, gentamicin, and cefotaxime were the most effective antibiotics. ESBL producers made up 34.35 percent of the isolates.[49]

a study by Raghunath D et al., in 2008 for assessing the emerging antibiotic resistance in bacteria with special reference to India, It is suggested that high-antibiotic-use settings play a role. The dangers of widespread antibiotic usage in animals have been discussed. Antibiotic resistance is steadily rising, while the number of newer medicines is diminishing, pointing to a post-antibiotic era in which treating illnesses will become increasingly difficult. This article tries to summarize the worldwide antimicrobial resistance situation and compare it to the Indian situation. The incidence of antibiotic resistance among key pathogen groups in India is discussed. The variables that contribute to the current high rates of antibiotic resistance have been emphasized.[50]

In a study by Goel N et al., (2009) to know the bacterial profile and determine the antibiotic pattern of lower respiratory tract isolates in patients admitted to ICU. 144 (69.5%) of the 207 specimens were culture positive, whereas 63 (30.4%) exhibited no growth. 161 isolates were isolated from 144 culture positives, with 154 (95.6%) being Gram negative bacilli (GNB). Two isolates per specimen were found in 17 (11.0%) of the patients. Pseudomonas aeruginosa (35 percent), Acinetobacter baumannii (23.6 percent), and Klebsiella pneumoniae were the most frequent GNBs in order of frequency (13.6 percent). Resistance to ciprofloxacin, ceftazidime, co-trimoxazole, and amoxycillin/clavulanic acid combination was highly high (80-100%) among prevalent GNB. Meropenem and doxycycline showed the least resistance. Nonfermenters are the most prevalent etiological agents of LRTIs in ICU, according to the study. The incidence of resistance to cephalosporins and other -lactam-lactamase inhibitors is frighteningly high. Meropenem was discovered to be the most sensitive medication against GNB of all the drugs tested. Doxycycline sensitivity was high in Acinetobacter and Klebsiella spp. [51]

A study done by Barai L et al, (2010) states that Major organisms isolated from blood were Pseudomonas sp.(51.7%) and Acinetobacter sp.(18.4%) while from urine it was Candida spp (43.3%)and E. coli (19.3%). The most frequently isolated organisms from both respiratory secretions and pus were Acinetobacter sp. (40.9% and 27% respectively) and Pseudomonas sp. (32.9% and 27% respectively). More than half of the E. coli, Klebsiella, and imipenem-resistant Pseudomonas and Acinetobacter strains were resistant to third-generation cephalosporins. Most drugs, including imipenem, were notably resistant to Acinetobacter (>70 percent resistance), while most members of the Enterobacteriacae group exhibited highest susceptibility to imipenem (50 percent -94 percent). The outcomes of this study may assist physicians in developing first-line empirical antibiotic therapy regimens for ICU patients.[52]

In a study by Sharma PR et al., (2010) to assess the antimicrobial consumption and impact of reserve antibiotic indent form in a ICU. The total amount of AM consumed per 100 bed days was 232. Penicillin with -lactamase inhibitor (21%) was the most often used AM, followed by antifungal medicines (13.4%), cephalosporins (11.7%), and macrolides (11.7%). Acinetobacter (26.1%) was the most often isolated organism, followed by Candida (23.8%) and Pseudomonas (23.8%). The average occupancy index was 0.53, and the average length of stay in the intensive care unit was 6 days. After the introduction of the indent form, the use of carbapenems (new AM) and antifungals dropped from 18.8/100 to 10.6/100 and 56.1/100 to 22.1/100 bed days, respectively. During the research period, the "Reserve AM indent form" proved useful in lowering AM usage. The AM indent form can be employed in AM stewardship programs and used to fight irrational usage and resistance. [53]

A study done by Tiwari P et al, (2010) in tertiary care hospital in Delhi states that Vancomycin-sensitive Staphylococcus aureus was the most prevalent pathogen recovered in 35% of positive blood and pus samples. The most prevalent organism recovered in 54% of positive urine samples was imepenem-sensitive bacteria. E. coli.[54]

In a cross sectional retrospective study in Indonesia by Radji M et al., (2011) to assess the antibiotic sensitivity pattern of bacterial pathogens in intensive unit. Specimens were taken from 385 individuals who had received antibiotic therapy, of whom 249 (64.68 percent) had positive cultures and 136 (35.32 percent) had negative cultures. Pseudomonas aeruginosa (P. aeruginosa) was the most common isolate (26.5%), followed by Klebsiella pneumoniae (K. pneumoniae) (15.3%), and Staphylococcus epidermidis (S. epidermidis) (14.9 percent). Cephalexin (95.3%), cefotaxime (64.1%), and ceftriaxone resistance was found in a significant percentage of P. aeruginosa isolates (60.9 percent). Antibiotics that were most effective against P. aeruginosa were amikacin (84.4%), imipenem (81.2%), and meropenem (81.2%). (75.0 percent). Cephalexin (86.5%), ceftriaxone (75.7%), ceftazidime (73.0%), and cefpirome resistance were all found in K. pneumoniae (73.0 percent). The majority of bacteria identified from Fatmawati Hospital's ICU in Jakarta, Indonesia, were found to be resistant to third-generation cephalosporins and quinolone antibiotics. Antibiotic susceptibility patterns must be monitored on a regular basis in order to create orders that will help the doctor in choosing empirical or guided therapy for infected patients. [55]

In a study by Shalini et al., (2011) to assess the antibiotic sensitivity pattern in urinary tract infection at tertiary hospital. Total of 170 urine culture sensitivity reports were analysed. Amikacin and nitrofurantoin resistance was found in more than 80% of the isolates, whereas norfloxacin, ciprofloxacin, and levofloxacin resistance was found in more than

70%. Resistance to cotrimoxazole (81.82 percent), amoxicillin (77.42 percent), and amoxiclav was quite strong (64.34 percent). E. Amikacin sensitivity was 98.91 percent (91), while Nitrofurantoin sensitivity was 93.48 percent in E. coli (86). Seventy-five percent of E. Minocycline was shown to be effective against E. coli isolates, indicating that it might be used to treat urinary tract infections in outdoor patients. [56]

In a study by Peripi SB et al., (2012) to assess the susceptibility pattern among the infectious organism resulting in antibiotic resistance. Antibiotics such as aminoglycosides (amikacin), quinolones (ofloxacin, ciprofloxacin), tetracyclines (doxycycline), penicillin (ampicillin), and sulphonamides (co-trimoxazole) were the most often given. The following organism profiles were found in 46 percent of culture laboratory reports: Escherichia coli (36 percent), Klebsiella pneumoniae (16 percent), Staphylococcus aureus (29 percent), Enterococcus faecalis (9 percent), and Pseudomonas aeruginosa (10 percent). The only drug that showed sensitivity patterns was amikacin (66.9%), whereas the bulk of antibiotics, such as cotrimoxazole, nalidixic acid, amoxicillin, gentamycin, and norfloxacin, had acquired a resistance rate of 55.1 percent -80.6 percent. Antimicrobial resistance develops as a result of indiscriminate prescription and use of new broad-spectrum antibiotics against sensitive species, according to the findings of this study. As a result, there is a pressing need to reduce the overuse of antibiotics in local hospitals in order to stem the rising tide of antimicrobial resistance. [57]

In a study by Seth KV et al., (2012) to assess the audit of antimicrobial sensitivity pattern of bacterial isolates in the ICU. Klebsiella pneumoniae (28.6%) and Pseudomonas aeruginosa were the most often isolated species (16.3 percent). The most prevalent infection was a lower respiratory tract infection (LRTI). For Gram-negative isolates (GNIs), imipenem, meropenem, and levofloxacin were the most effective antimicrobials,

whereas vancomycin, ciprofloxacin, and gentamicin were the most effective antimicrobials (GPIs). GNIs and GPIs both showed widespread resistance to third-generation cephalosporins and cloxacillin, respectively. The antibacterial activity against LRTI was ranked as follows: meropenem (100 percent) > levofloxacin (100 percent) > sparfloxacin (94.4 percent) > gentamicin (83.3 percent). GNIs resistant to third-generation cephalosporins were the most common resistant organisms. Fluoroquinolones and aminoglycosides were shown to be effective first-line antibiotics for the treatment of LRTI in a hospital environment. [58]

In a retrospective study by Pattanayak C et al., (2013) to assess the drug sensitivity and resistance of ICU of teaching hospital in eastern India. Nosocomial infection was found in 28.2 percent of patients. The most prevalent infection was urinary tract infection (54.9 percent). E. coli was the most common isolate (52.7%), followed by P. mirabilis (15.4%) and Ps aeruginosa (13.2 percent). Polymyxin B, Gatifloxacin, and Ceftriaxone sensitivity was high, whereas Cephalexin, Cefadroxil, Tobramycin, and Prulifloxacin resistance was high. The majority of the microorganisms were resistant to third-generation cephalosporins and aminoglycoside antibiotics. Antibiotic susceptibility pattern monitoring and prudent antibiotic usage are critical for decreasing nosocomial infection rates and antimicrobial resistance. [59]

In a retrospective study conducted by Thomas B et al., (2014) to assess the pattern of micro-organism and to analyze the antibiotic pattern and to conduct the cost effectiveness for prescribed medications. A total of 796 recorded records were evaluated for the sensitivity pattern research, and it was discovered that Escherichia coli was the most common organism detected in 36.4 percent of the isolated specimens, followed by Klebsiella, Streptococcus pneumoniae, Staphylococcus aureus, and Pseudomonas. E. coli

was the most susceptible to Amikacin, followed by Klebsiella and Pseudomonas to meropenem, according to the sensitivity pattern data. Lower respiratory tract infection was discovered to be the most frequent illness among 51 individuals in the research. Cephalosporins (73%) were the most commonly recommended antibiotics, with ceftriaxone (63.5%) being the most commonly given. In compared to levoflox, ceftriaxone was shown to be a more cost-effective antibiotic. According to the findings, pharmacists' involvement in aiding prescribers with antibiotic prescribing is critical in attaining rational medication usage and decreasing resistance. [60]

In a retrospective study by Sarraf DP et al., (2015) to assess the utilization pattern of antimicrobial agents and sensitivity pattern in intensive care unit. The most often given AMA was Piperacilin (16.6 percent), followed by Amikacin (15.5 percent), Vancomycin (14.4 percent), Ceftriaxone (13.3 percent), and Ampicillin (13.3 percent) (12.2 percent). More than two antibiotics were administered to 17.7% of patients. The generic names were not used to prescribe any of the medicines. Staphylococcus aureus accounted for 31.8 percent of the pathogenic organisms identified, followed by Escheria coli (20.5 percent), Pseudomonas (18.2 percent), and others. Carbenicilin, Imipenem, Vancomycin, and Amoxyclav were shown to be the most sensitive antibiotics against S. aureus, whereas Cefotaxime and Ceftriaxone were the least effective. E. coli was found to be most sensitive to Gentamicin, Imipenem and Chloramphenicol and least sensitive to most commonly used drugs like Ciprofloxacin, Cefotaxime and Amoxyclav. Pseudomonas was found to be most sensitive to Ceftazidime, Carbenicilin and Imipenem and least sensitive to Amoxyclav, Ceftriaxone, Vancomycin and Ciprofloxacin. There is a lot of scope for rational prescribing and giving feedback to hospital administrators to improve prescribing behaviors. [61]

A study done by Pawar SK et al., (2016) in tertiary hospitals of western india states that total of 1849 clinical isolates identified during the study period were included in the study project. Bacterial distribution with the highest being Klebsiella spp. (n = 466). This was followed by Acinetobacterspp. (n = 377), E. coli (n = 368), P. aeruginosa (n = 311), and S. aureus (n = 249) with the least isolated being Salmonellaspp. (n = 2). Most bacterial isolates (n = 1305) were from MICU, which contributed to 70.57% of the total isolates with Maximum isolates were from endotracheal tube (n = 650), followed by urine (n = 558), sputum. Antimicrobial use in ICUs must be optimized in order to improve patient outcomes and avoid the establishment of multidrug resistance. This may be accomplished by tight infection control measures such as strict hand washing procedures, universal safety precautions, and the design and execution of an antibiotic policy, as well as an antibiotic stewardship program.[62]

A study done by Moolchandani K et al., (2017) in tertiary hospitals of southern India states that the most common positive clinical specimen received was tracheal aspirate (29.9%), followed by exudate (22.7 percent). The most prevalent organisms recovered were Acinetobacter spp from tracheal aspirate and Pseudomonas spp from blood specimens, whereas Escherichia coli was the most common organism detected in urine, exudate, and sterile fluid specimens. HAIs accounted for around 22.2 percent of infections, with pneumonia (6.24 percent) being the most frequent. Antimicrobial susceptibility testing found that the majority of Gram-Negative Bacilli (GNB) were Multi Drug Resistant (MDR), meaning they were resistant to three or more classes of antibiotics such as cephalosporins, carbapenems, aminoglycosides, tetracyclines, and fluoroquinolones. The prevalence of Methicillin- resistant Staphylococcus aureus (MRSA) and Vancomycin-resistant Enterococci (VRE) were found to be 40.6% and 11.9% respectively.[63]

In study by Mohanty A et al., (2017) to determine the bacterial agents responsible for hospital acquired septicaemia and to study the antibiotic sensitivity profile. 41.4 percent (145) of the 350 blood culture samples obtained were culture positive. Gram-positive bacteria were found in 61.4 percent of blood culture positive samples, with coagulase negative staphylococci (35.2 percent) and Staphylococcus aureus being the most common (22.8 percent). Among Gram-negative bacteria, the most common isolates were Escherichia coli (19.3%), Typhi (9.7%), and Klebsiella spp. (6.9%). Penicillin and erythromycin resistance was highest among staphylococci in our investigation. Gentamicin, amoxyclav, and ciprofloxacin resistance was highest in Enterobacteriaceae. Infections in the blood stream were dominated by Gram-positive bacteria. Resistance to aminoglycosides and cephalosporins was particularly prevalent in Gram-negative bacteria. As a result, fast microbiological identification and antibiotic susceptibility factors become important for early antimicrobial therapy commencement.[64]

In a cross sectional retrospective study by Savanur SS et al., (2019) to evaluate the antibiotic sensitivity and resistance pattern in an ICU setting of a tertiary care hospital. The bacteria isolated were predominantly gram-negative bacilli, with Escherichia coli (18.6%), Acinetobacter (14.5%), Klebsiella (11.6%), Pseudomonas (9.8%), and Proteus (9.8%) dominating (1.74 percent). Coagulase negative staphylococcus (CoNS) was the most frequent gram-positive bacteria identified (15.6 percent), followed by Streptococcus (2.32 percent). In addition, fungal growth was seen in 26 (15.11%) of the samples. Blood (n = 48), sputum (n = 17), urine (n = 39), ET aspirate (n = 40), pus (n = 11), catheter (n = 4), ear swab (n = 2), and stool (n = 1) were among the samples that developed microbes. In ICUs, Gram-negative bacterial infections are on the rise, resulting in antibiotic overuse. As a result, in a hospital setting, antibiotic sensitivity and resistance patterns must be

researched in order to advise the treating consultant in initiating empirical antibiotics in critical patients. [65]

In a cross sectional study conducted by Nusrat T et al., (2020) to assess the study the antibiotic resistance and sensitivity pattern of metalo beta lactamase producing gram negative bacilli on ventilator associated pneumonia. Acinetobacter spp. (43.2 percent), Klebsiella spp. (20 percent), and Pseudomonas spp. were the most frequent bacteria found (18.9 percent). The age or gender of the patients had no bearing on whether or not they had a favorable culture. 38 (92.7%) of the 41 Acinetobacter spp. identified were resistant to gentamicin, followed by 36 (87.8%) to ceftriaxone. 22 (83.3 percent) of the 24 Klebsiella spp. identified were resistant to ceftriaxone. 16 (88.8%) of the 18 Pseudomonas spp. recovered were resistant to ciprofloxacin, whereas 13 (72.2%) were resistant to ceftriaxone. Ceftriaxone and ciprofloxacin resistance was found in all nine E. coli isolates. Ciprofloxacin resistance was found in all four Proteus spp. identified (100 percent). In addition, among imipenem-resistant infections, the phenotype MBL producing was 65.22 percent and the genotype was 45.65 percent. Amoxyclav, amikacin, azithromycin, ceftazidime, ceftriaxone, colistin, and gentamycin were all effective against imipenem-resistant bacteria. Positive cultures were found in 90% of VAP patients, although they were unrelated to the patients' age or gender. Acinetobacter spp., Klebsiella spp., and Pseudomonas spp. were the most frequent bacteria found, with the majority of them resistant to ceftriaxone. The findings utilized to offer future recommendations on how to handle VAP in this institution empirically. [66]

METHODOLOGY

Study design:

A one year hospital based cross sectional study

Period of study:

1st January 2020 to 31st December 2020

Study design:

longitudinal study

Study period:

They study was conducted from January 2020 to December 2020. In ICU of KLEs DR. Prabhakar kore hospital

Sample size:

calculated using the formula

The minimum sample size formula based on prevalence rate is

$$n = \frac{z_\alpha{}^2 P(1-P)}{d^2}$$

where P is age likely difference in the prevalence.

zα is linked with the level of significance. For 5%level of the significance

zα=1.96.

Ref:

With P=34% and d=15% of P=5. 10%,

The sample size is 331.

Rounded off to 330.

Inclusion criteria

•All adult patients > 18 years of age coming to ICU are included

Exclusion criteria

• Culture negative patients

• Non- bacterial infections

• Repeat isolates from the same patient

METHODOLOGY

• Patients admitted at ICU of KLES hospital fulfilling provisional diagnosis of bacterial infection will be included in the study.

• Informed consent will be obtained.

• Institutional ethical clearance will be obtained.

• A detailed history, clinical findings were noted.

• All relevant clinical samples like blood, pus, urine, sputum, etc which were sent for culture and sensitivity pattern assessment are studied and noted.

• Samples are cultured using standard culture methods and antibiotic sensitivity pattern is done by Kirby bauer disc diffusion method.

• Other relevant investigations like complete blood count, procalcitonin, serum lactate levels etc were noted.

All the patients fulfilling the inclusion criteria and willing to participate, were included in the study

- Organisms isolated and their sensitivity pattern was assessed.
- Clinical improvement of patient is observed and results are formulated

STATISTICAL ANALYSIS

Since the study is of observational study the plan of analysis was followed. For the continuous quantitative variables mean and standard deviation was calculated. For the purpose of comparison if the data is divided into two groups with respect to certain qualitative characteristic, the continuous variables were compared using suitable tools of statistics like student's unpaired t test. The pre and post treatment measures were compared using student's paired t test. Discrete variables were represented by median.

The categorical data were expressed in terms of rates, ratios and percentages. The association between the outcome, clinical and demographic characteristics were tested using Chi-square test, test of proportion or Fisher's exact test. For discrete variables nonparametric tests was used. Apart from the above suitable tools like ANOVA, correlation, regression etc., were used according to the need. Suitable graphs were used to depict the comparison. For all the tests the value of p less than 5% (0.05) was considered significant.

RESULTS

The present one-year longitudinal study titled '**CLINICAL STUDY OF BACTERIAL PROFILE AND ANTIBIOTIC SENSITIVITY PATTERN OF ISOLATES IN MEDICAL ICU'** was carried out in the Department of General Medicine, KLES Prabhakar Kore Hospital and Research Centre, Belagavi. During the study period from January 2020 to December 2020.

Total of 417 positive cultures fulfilling inclusion criteria were included in the study. The findings, observations and results are tabulated below.

Table 2: Demographic profile of patients

Demographic profile	No of patients	% of patients
Age groups		
16-40yrs	89	21.34
41-60yrs	144	34.53
61-80yrs	153	36.69
>=81yrs	31	7.43
Mean±SD	55.80±17.81	
Gender		
Male	262	62.83
Female	155	37.17
Total	417	100.00

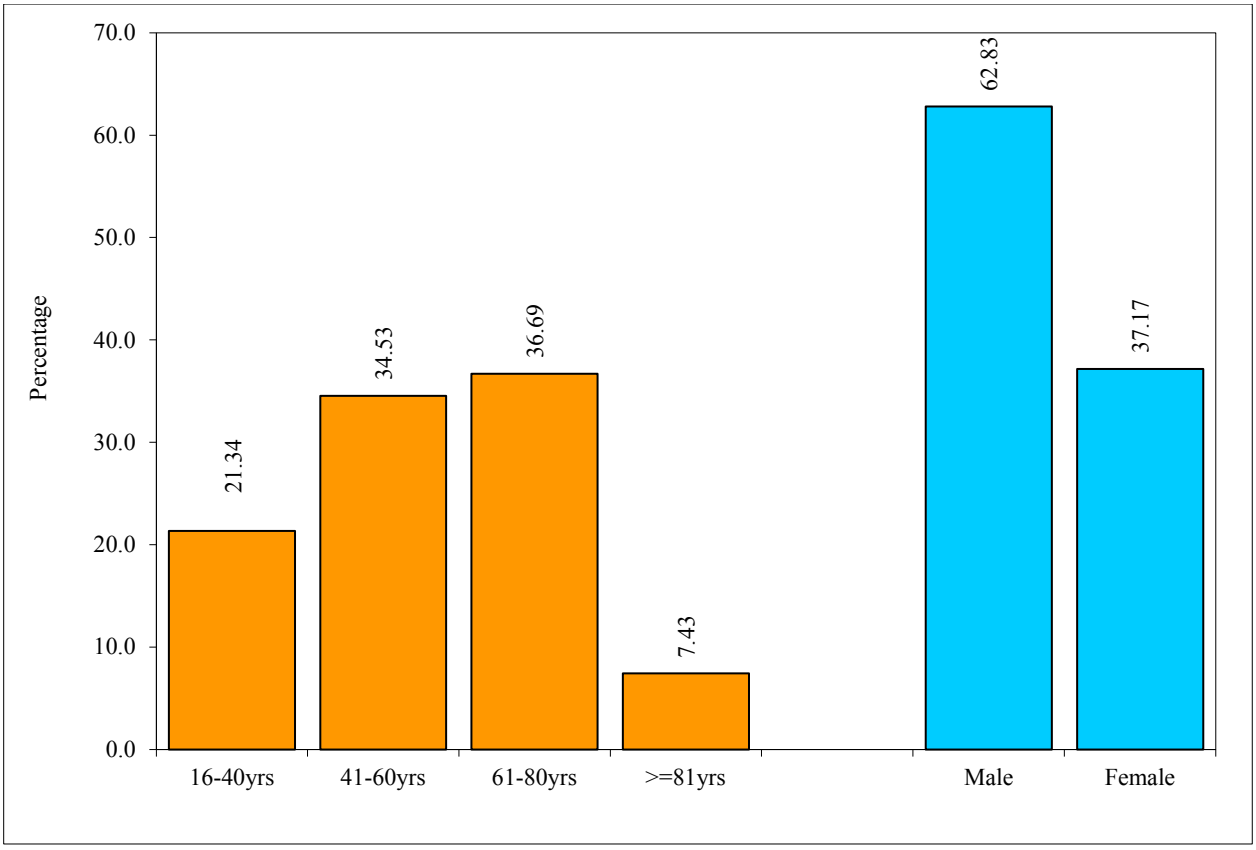

Figure 2: Demographic profile of patients

Out of 417 total positive cultures, males are 262 (62.8%) and females are 155 (37.17%), showing male preponderance and the male to female ratio of 2:1. The mean age of patients in present study was 55.80±17.81yrs of age. Majority of the patients in present study were in age group of 61-80 years (36.69%), followed by in the age of 41-60yrs of age (34.53%), and 21.34% patients in 16 – 40 yrs .

Table 3: Past comorbidities and status at discharge of patients

	No of patients	% of patients
Past history		
Diabetic mellitus	100	23.98
Hypertension	108	25.90
Both DM and HTN	89	21.34
None	120	28.78
Status at discharge		
Expired	97	23.26
Improved	264	63.31
Un-changed	56	13.43
Total	417	100.00

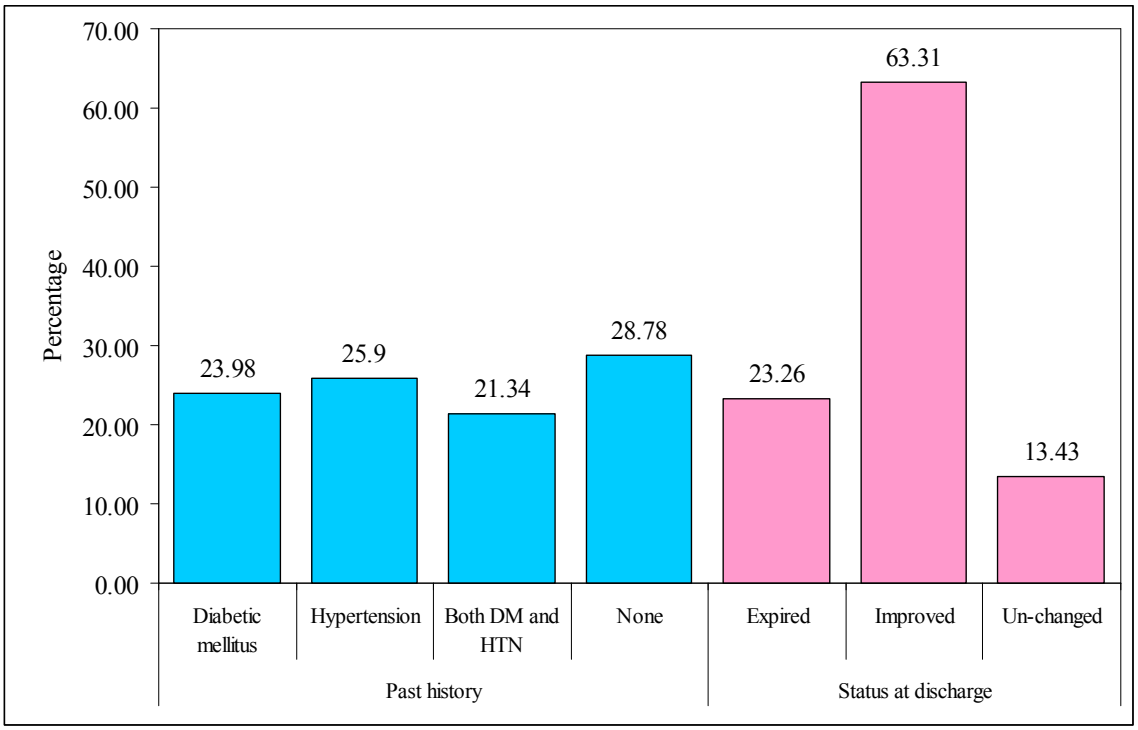

Figure 3: Graphic representation of Past comorbidities and status at discharge of patients

Above data is depicting the significant past medical history of the patient, in which majority are hypertensives constituting 25.9%, followed by diabetics with 23.98%.
Next part of the image showing the mortality patterns on follow up, in which majority are improved constituting 63.31%. in which maximum improvement is seen with septicaemia patients whereas maximum mortality is observed with ET cultures owing to its severity. Unchanged category above which is constituting about 13% includes patients who left the study due to personal causes.

Table 4: Types of various positive cultures with their prevalence:

Types of blood culture	No of patients	% of patients
Blood culture	176	42.21
ET culture	30	7.19
PUS culture	27	6.47
Sputum culture	26	6.24
Urine culture	158	37.89
Total	417	100.00

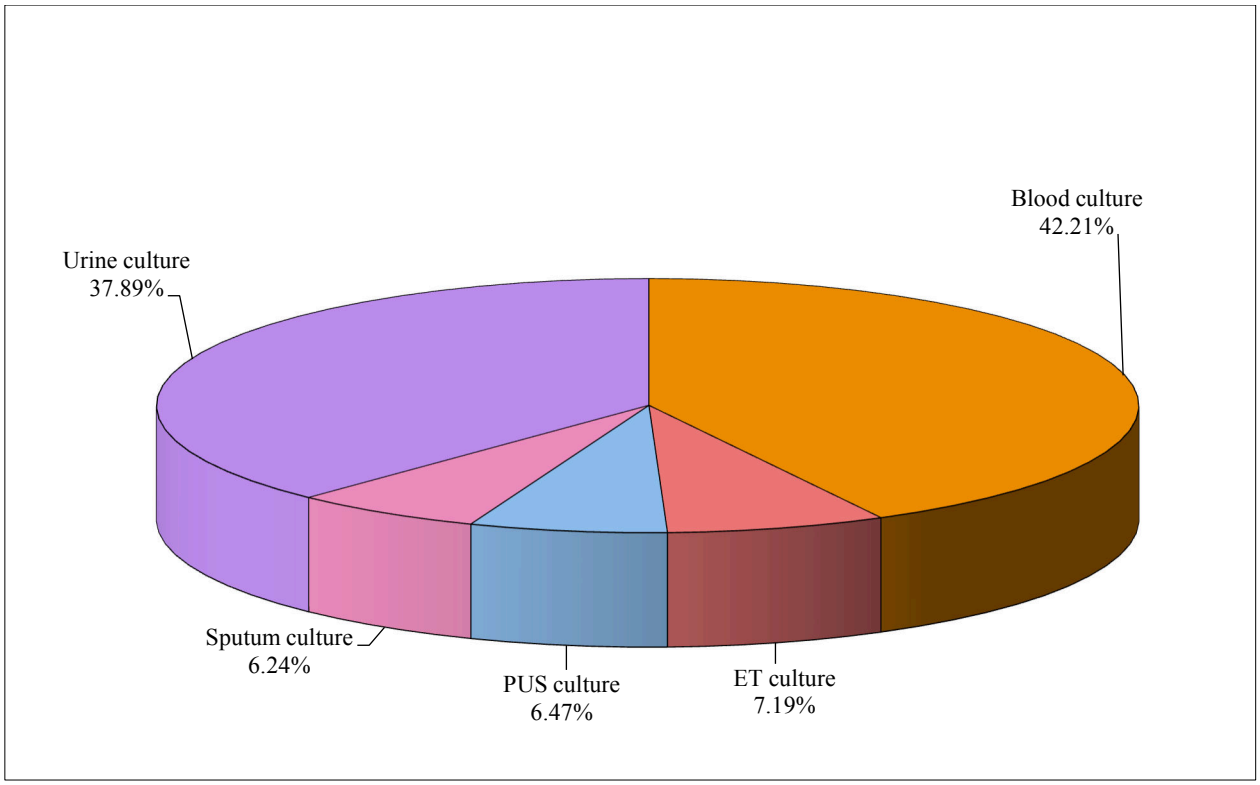

Figure 4: Types of various cultures of patients

Among the various types of cultures depicted above , majority of the positive cultures are blood cultures with 42.21% prevalence , followed by urine cultures in 37.89%, followed by ET culture in 7.19%, pus culture in 6.47% and sputum culture in 6.24%.

TABLE 5: PRIMARY SOURCE OF INFECTION IN BLOOD CULTURES

Diagnosis type	No. of patients	% of patients
Respiratory	50	28.41%
Genito urinary	21	11.93%
Gastro intestine	19	10.80%
Skin infection	18	10.23%
Others	5	2.84%
Unknown Primary Source	63	35.80%
Total	176	100.00%

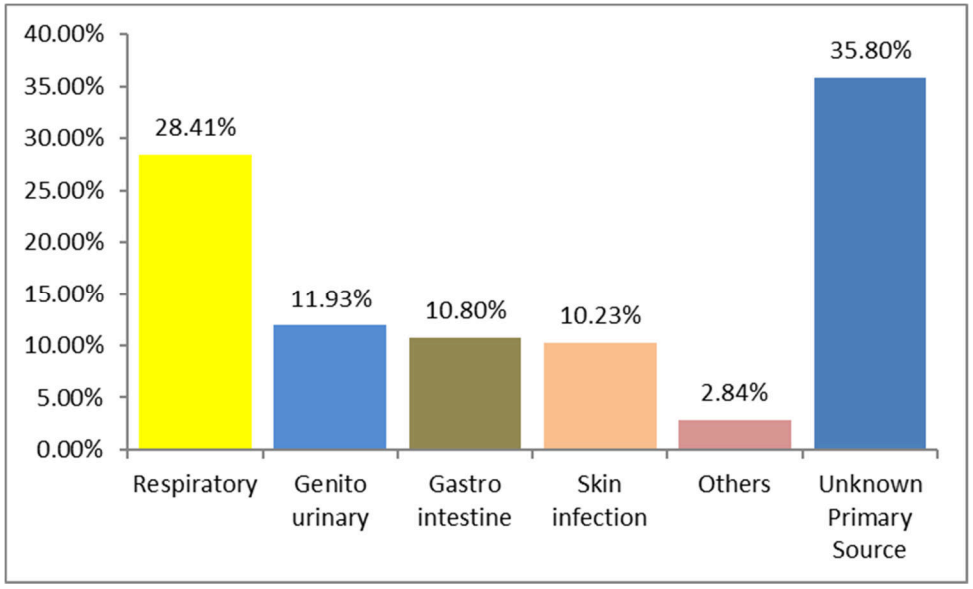

Figure 5: Primary Source Of Infection In Blood Cultures

TABLE 6 SOURCE OF INFECTION IN URINE CULTURES

Diagnosis type	No. of patients	% of patients
Cystitis	82	51.90%
Pyelonephritis	40	25.32%
Urethritis	22	13.92%
Vaginitis	8	5.06%
Prostatitis	6	3.80%
Total	**158**	**100.00%**

TABLE 7: SOURCE OF INFECTION IN ET CULTURES

Diagnosis type	No. of patients	% of patients
Ventilator associated pneumonia	82	53.95%
COPD	40	26.32%
Chronic bronchitis	22	14.47%
Community acquired pneumonia	8	5.26%
Total	**152**	**100.00%**

TABLE 8: SOURCE OF INFECTION IN PUS CULTURES

Diagnosis type	No. of patients	% of patients
Scrotal abscess	7	25.93%
Diabetic ulcers	10	37.04%
Necrotising fascitis	6	22.22%
Submandibular abscess	4	14.81%
Total	**27**	**100.00%**

TABLE 9: SOURCE OF INFECTIONS IN SPUTUM CULTURES

Diagnosis type	No. of patients	% of patients
Pneumonia	13	50.00%
Tracheobronchitis	5	19.23%
Pharyngitis	5	19.23%
Lung abscess	3	11.54%
Total	**26**	**100.00%**

CULTURES AND ANTIBIOTIC SENSITIVITY PATTERNS:

Table 10: Overall Growth in the various cultures :

Growth in the culture	No of patients	% of patients
Acinetobacter baumannii	34	8.15
Citrobacter species	5	1.20
Coagulase-negative Staphylococcus species	41	9.83
Enterobacter species	39	9.35
Enterococcus species	20	4.80
Escherichia coli	104	24.94
Haemophilus influenza	6	1.44
Klebsiella pneumonia	69	16.55
Methicillin Resistant Staphylococcus aureus	5	1.20
Proteus species	10	2.40
Pseudomonas species	11	2.64
Staphylococcus aureus	16	3.84
Staphylococcus epidermidis	11	2.64
Staphylococcus haemolyticus	35	8.39
Streptococcus pneumonia	11	2.64
Total	417	100.00

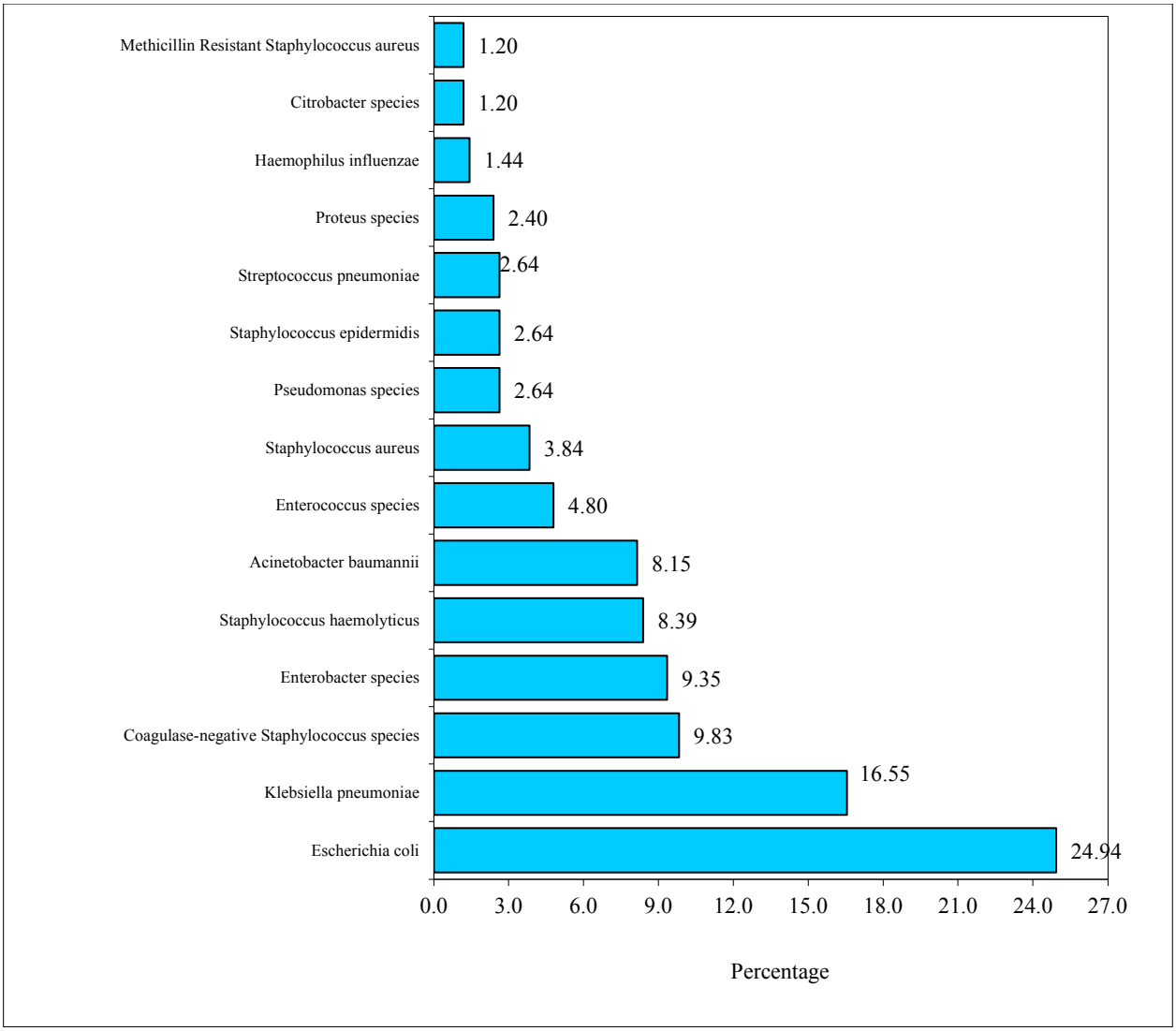

Figure 6 : Overall Growth in the various cultures of patients

The above image is depicting overall growth in various cultures altogether, in which Escherichia coli constitutes major component with 24.94%, followed by klebsiella pneumonia with 16.55%, coagulase-negative staphylococcus species with 9.83% and so on. Least prevalence is with MRSA i.e, 1.2%

Table 11: Age group wise cultures distribution

Types of blood culture	16-40yrs	%	41-60yrs	%	61-80yrs	%	>=81 yrs	%	Total	%
Blood culture	40	22.73	56	31.82	67	38.07	13	7.39	176	42.21
ET culture	7	23.33	12	40.00	11	36.67	0	0.00	30	7.19
PUS culture	8	29.63	8	29.63	9	33.33	2	7.41	27	6.47
Sputum culture	8	30.77	13	50.00	4	15.38	1	3.85	26	6.24
Urine culture	26	16.46	55	34.81	62	39.24	15	9.49	158	37.89
Total	89	21.34	144	34.53	153	36.69	31	7.43	417	100.0
Chi-square=13.8140, p=0.3130										

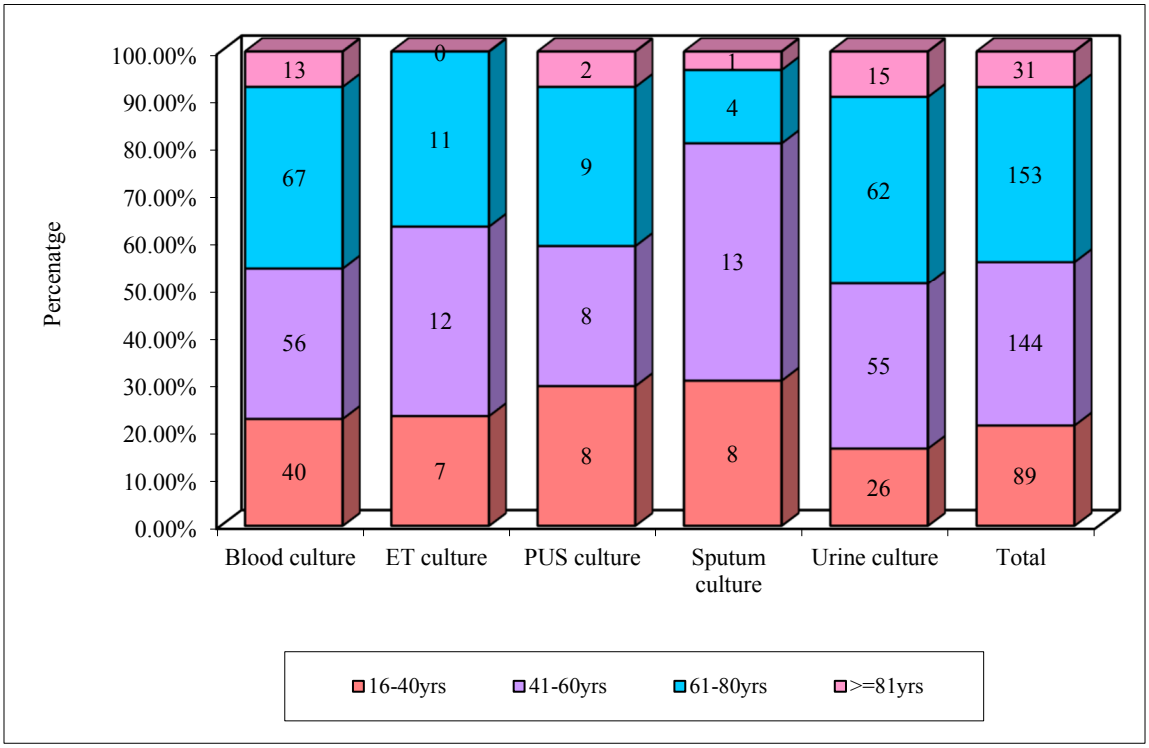

Figure 7: Age wise cultures distribution

Above image is depicting age group distribution of various cultures in which, majority are in the age group of 61-80 yrs and least prevalence is seen with above 80 yrs of age.

Table 12: Gender wise cultures distribution

Types of blood culture	Male	%	Female	%	Total	%
Blood culture	112	63.64	64	36.36	176	42.21
ET culture	24	80.00	6	20.00	30	7.19
PUS culture	16	59.26	11	40.74	27	6.47
Sputum culture	19	73.08	7	26.92	26	6.24
Urine culture	91	57.59	67	42.41	158	37.89
Total	262	62.83	155	37.17	417	100.00
Chi-square=7.0070, p=0.1360						

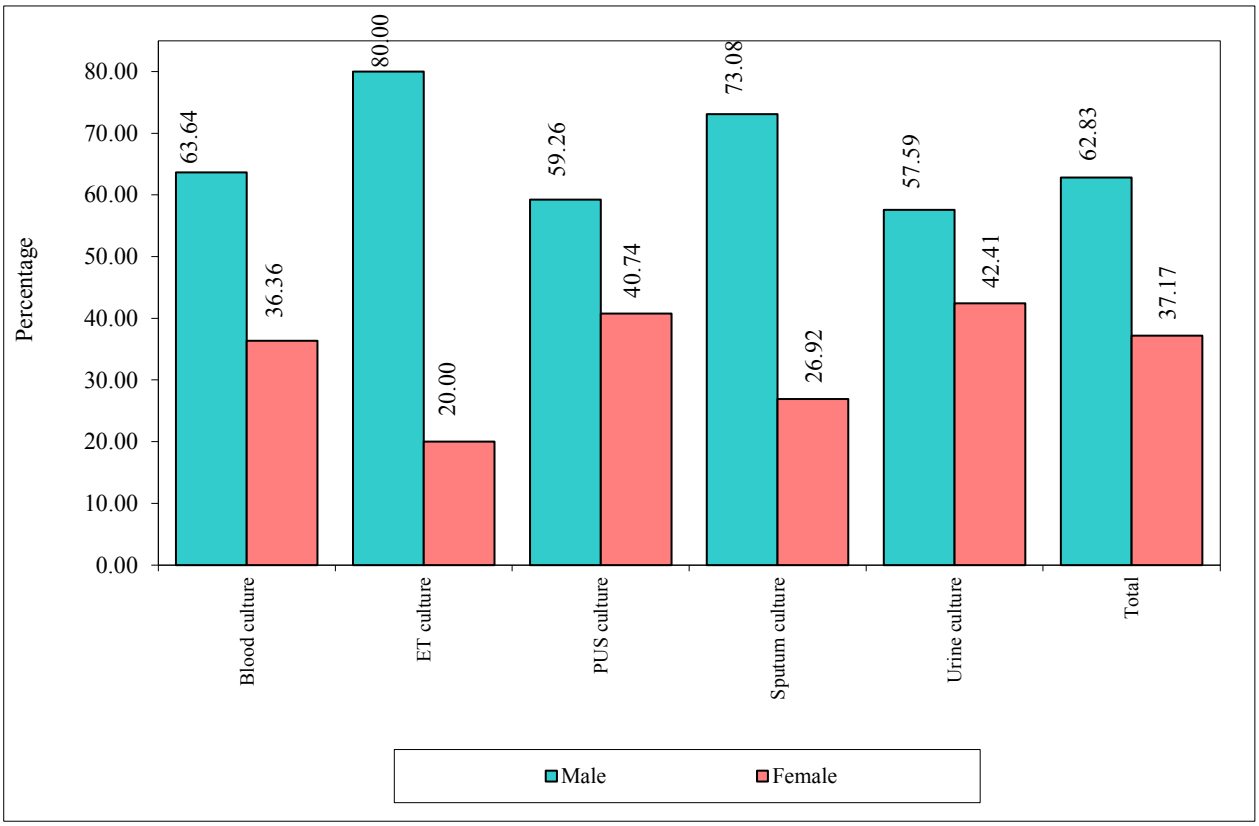

Figure 8: Gender wise cultures distribution

The above images are depicting the gender wise distribution patterns of various cultures, in which male preponderance is seen in all the types of cultures compare with the females. In males most common positive culture is blood culture , in females most common positive culture is urine culture.

Table 13: Mortality pattern of cultures

Types of blood culture	Expired	%	Improved	%	Un-changed	%	Total	%
Blood culture	44	25.00	113	64.20	19	45.02	176	42.21
ET culture	7	23.33	14	46.67	9	125.10	30	7.19
PUS culture	7	25.93	19	70.37	1	15.44	27	6.47
Sputum culture	4	15.38	16	61.54	6	96.23	26	6.24
Urine culture	35	22.15	102	64.56	21	55.42	158	37.89
Total	97	23.26	264	63.31	56	56.00	417	100.00
Chi-square=11.2580, p=0.5070								

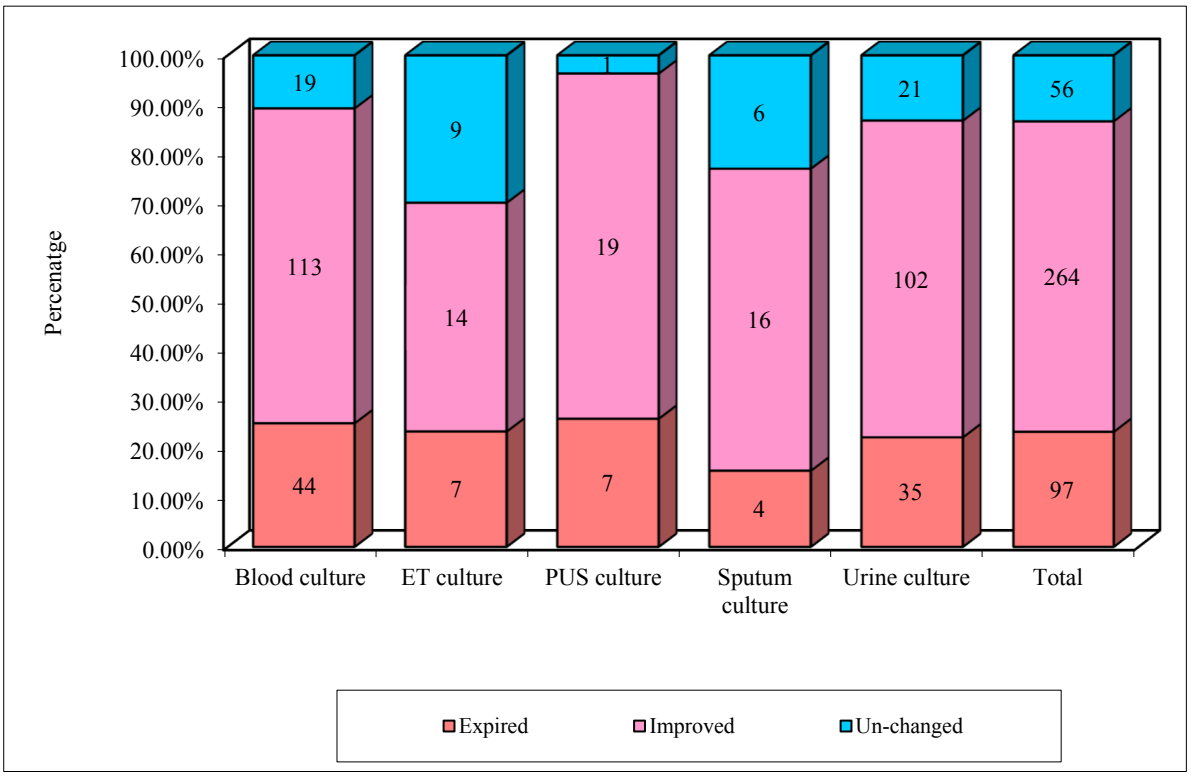

Figure 9: Morality wise blood culture

The above images are depicting the prognosis of the patient on follow up, in which majority improved constituting 63.31%, and the mortality percentage constitutes 23.26%. maximum mortality is seen with blood culture positive patients.

Table 14: Co-morbidities pattern in various cultures

Types of blood culture	DM	%	HTN	%	Both DM & HTN	%	NIL	%	Total	%
Blood culture	41	23.30	45	25.57	38	21.59	52	29.55	176	42.21
ET culture	7	23.33	10	33.33	9	30.00	4	13.33	30	7.19
PUS culture	7	25.93	9	33.33	4	14.81	7	25.93	27	6.47
Sputum culture	7	26.92	10	38.46	2	7.69	7	26.92	26	6.24
Urine culture	38	24.05	34	21.52	36	22.78	50	31.65	158	37.89
Total	100	23.98	108	25.90	89	21.34	120	28.78	417	100.0
Chi-square=13.4370, p=0.0980										

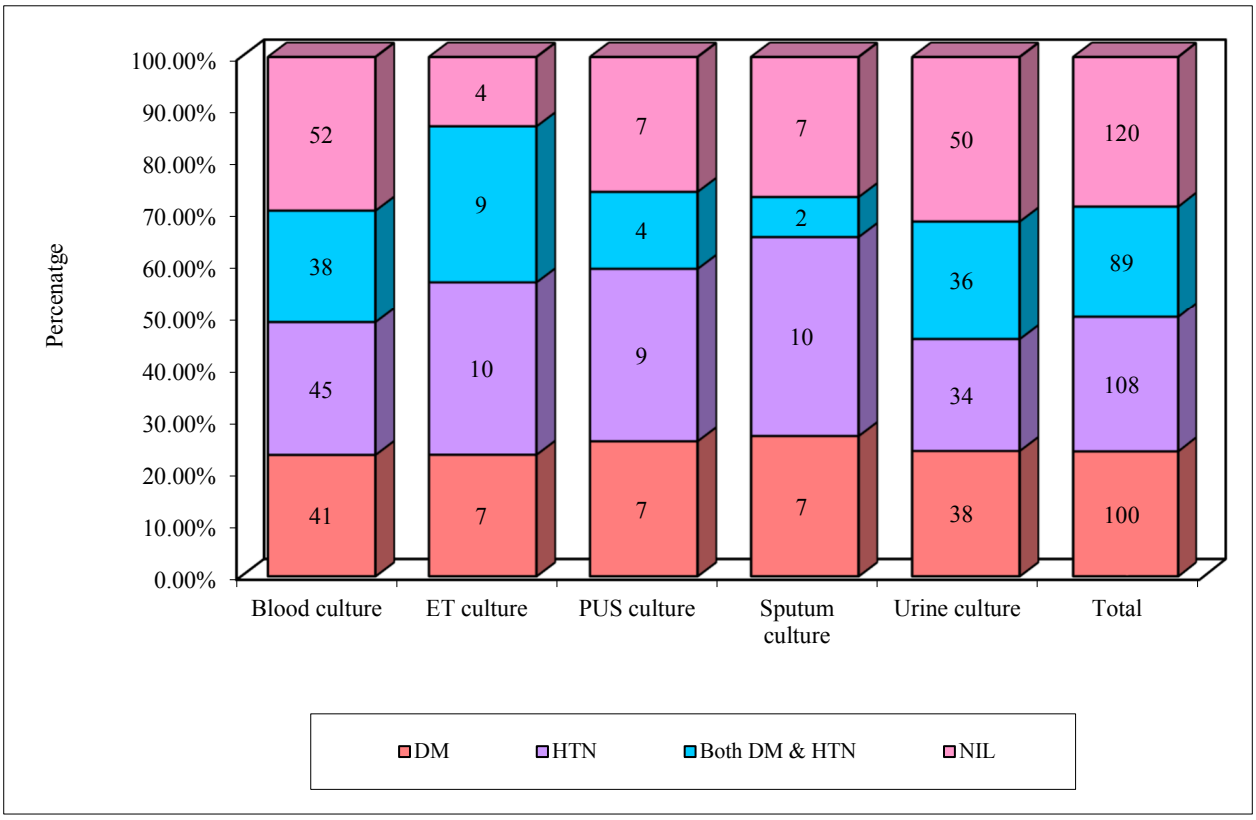

Figure 10: Co-morbidities pattern of various cultures

The above images are depicting common comorbidities and their prevalence in various cultures in which, most common positive culture in diabetics is sputum and pus cultures, in patients with both diabetes and hypertension as comorbidities most common positive culture is blood culture.

Table 15: Sensitivity and resistance patterns of microorganisms to different antibiotics

Drugs	Sensitive	%	Resistance	%
Amikacin	113	27.10	304	72.90
Amoxyclav	0	0.00	417	100.00
Ampicillin	29	6.95	388	93.05
Cefepime	36	8.63	381	91.37
Cefotaxime	23	5.52	394	94.48
Cefoxitin	55	13.19	362	86.81
Ceftazidime	32	7.67	385	92.33
Cefuroxime	22	5.28	395	94.72
Clindamycin	45	10.79	372	89.21
Clarithromycin	31	7.43	386	92.57
Colistin	82	19.66	335	80.34
Ciprofloxacin	101	24.22	316	75.78
Fosfomycin	150	35.97	267	64.03
Gentamicin	130	31.18	287	68.82
Imipenem	86	20.62	331	79.38
Linezolid	97	23.26	320	76.74
Levofloxacin	124	29.74	293	70.26
Moxifloxacin	62	14.87	355	85.13
Meropenem	105	25.18	312	74.82
Nitrofurantoin	68	16.31	349	83.69
Norfoxacin	19	4.56	398	95.44
Penicillin	21	5.04	396	94.96
P/T	28	6.71	389	93.29
T/S	33	7.91	384	92.09
Tetracycline	133	31.89	284	68.11
Tigecycline	142	34.05	275	65.95
Teicoplanin	99	23.74	318	76.26
Vancomycin	116	27.82	301	72.18

The above table is depicting the sensitivity and resistance patterns of most common antibiotics tested, in which maximum sensitivity is observed with fosfomycin (35%) followed by tigecycline(34%) tetracycline(31%), gentamycin(31%), levofloxacin(29%), amikacin(27%) and so on in descending order.

Least sensitivity and maximum resistance is observed with amoxyclav (100%), followed by norfloxacin (95.4%), pencillin (94.9%), cefotaxime(94.4%), cefuroxime(94.78%) and so on in descending order.

Table 16: Sensitivity pattern of various organisms to various antibiotics

Drugs	Acinetobacter baumannii	Citrobacter species	Coagulase-ive Staphylococcus species	Enterobacter species	Enterococcus species	Escherichia coli	Haemophilus influenzae	Klebsiella pneumoniae	Methicillin Resistant Staphylococcus aureus	Proteus species	Pseudomonas species	Staphylococcus aureus	Staphylococcus epidermidis	Staphylococcus haemolyticus	Streptococcus pneumoniae	Total
Amikacin	12	-	-	8	-	59	-	13	-	6	5	5	-	-	5	113
Amoxiclav	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Ampicillin	-	-	4	3	1	7	2	3	-	3	-	2	1	2	1	29
Cefepime	8	-	-	7	-	12	-	4	-	3	-	1	-	-	1	36
Cefotaxime	9	-	-	4	-	4	-	3	-	2	-	-	-	-	1	23
Cefoxitin	-	-	-	3	-	34	-	7	-	6	-	4	-	-	1	55
Ceftazidime	8	-	-	5	-	10	-	4	-	3	-	1	-	-	1	32
Cefuroxime	-	-	-	6	-	8	-	4	-	3	-	1	-	-	-	22
Clindamycin	-	-	21	-	-	-	2	-	2	-	2	5	5	4	4	45
Clarithromycin	-	-	11	-	-	-	-	-	3	-	1	3	5	6	2	31
Colistin	-	2	-	9	-	45	-	16	-	1	5	3	-	-	1	82
Ciprofloxacin	8	-	21	6	1	14	3	6	-	6	6	9	8	10	3	101
Fosfomycin	-	1	18	9	1	66	-	9	4	3	2	10	5	18	4	150

Gentamicin	7	-	21	6	1	39	3	9	1	4	6	9	3	17	4	130
Imipenem	-	-	-	8	-	58	-	11	-	-	3	3	-	-	3	86
Linezolid	-	-	30	-	11	-	4	-	2	-	2	7	9	28	4	97
Levofloxacin	9	1	21	10	2	21	3	9	1	7	6	9	8	10	7	124
Moxifloxacin	-	-	18	4	-	8	1	5	1	1	1	5	7	7	4	62
Meropenem	11	-	-	7	-	56	-	11	-	7	5	4	-	-	4	105
Nitrofurantoin	-	-	-	4	8	43	1	5	-	-	-	3	-	2	2	68
Norfloxacin	-	1	-	2	2	5	-	1	-	4	1	3	-	-	-	19
Penicillin	-	-	7	-	2	-	-	-	-	-	-	4	1	4	3	21
P/T	-	-	-	1	-	13	-	7	-	2	2	3	-	-	-	28
T/S	-	-	6	3	-	7	-	4	-	2	-	6	2	-	3	33
Tetracycline	10	-	29	8	2	28	-	9	3	-	2	12	8	17	5	133
Tigecycline	-	2	-	19	-	84	-	30	-	-	-	4	-	-	3	142
Teicoplanin	-	-	32	-	13	-	2	-	4	-	2	8	9	26	3	99
Vancomycin	-	-	36	-	12	-	2	-	4	-	2	10	11	34	5	116

The above table is depicting the individual sensitivity patterns of commonly isolated organisms, in which varied patterns were observed and were elaborated further in the results.

Table 17: Types of culture with corresponding growth in the culture

No	Growth in the culture	Blood culture	%	ET culture	%	PUS culture	%	Sputum culture	%	Urine culture	%	Total
1	Acinetobacter baumannii	21	11.93	2	6.67	0	0.00	1	3.85	10	6.33	34
2	Citrobacter species	0	0.00	0	0.00	0	0.00	0	0.00	5	3.16	5
3	Coagulase-negative Staphylococcus species	40	22.73	0	0.00	0	0.00	0	0.00	1	0.63	41
4	Enterobacter species	11	6.25	3	10.00	2	7.41	0	0.00	23	14.56	39
5	Enterococcus species	6	3.41	0	0.00	0	0.00	0	0.00	14	8.86	20
6	Escherichia coli	32	18.18	3	10.00	2	7.41	0	0.00	67	42.41	104
7	Haemophilus influenza	1	0.57	0	0.00	0	0.00	5	19.23	0	0.00	6
8	Klebsiella pneumonia	7	3.98	20	66.67	8	29.63	7	26.92	27	17.09	69
9	Methicillin Resistant Staphylococcus aureus	5	2.84	0	0.00	0	0.00	0	0.00	0	0.00	5
10	Proteus species	1	0.57	1	3.33	1	3.70	0	0.00	7	4.43	10
11	Pseudomonas species	3	1.70	1	3.33	4	14.81	0	0.00	3	1.90	11
12	Staphylococcus aureus	3	1.70	0	0.00	10	37.04	3	11.54	0	0.00	16
13	Staphylococcus epidermidis	11	6.25	0	0.00	0	0.00	0	0.00	0	0.00	11
14	Staphylococcus haemolyticus	34	19.32	0	0.00	0	0.00	0	0.00	1	0.63	35
15	Streptococcus pneumonia	1	0.57	0	0.00	0	0.00	10	38.46	0	0.00	11
	Total	176	100.00	30	100.00	27	100.00	26	100.00	158	100.00	417

The above table is depicting the most common organism isolated from each type of culture, in which the most common organism in blood cultures is coagulase negative staphylococcus species , ET culture is klebsiella pneumonia, pus culture is staphylococcus aureus, sputum culture is streptococcus pneumonia, urine culture is Escherichia coli.

Table 18: Sensitivity of Coagulase-negative Staphylococcus species in blood culture (n=40)

Drugs	Sensitive	%	Resistance	%
Vancomycin	36	90.00	4	10.00
Teicoplanin	31	77.50	9	22.50
Linezolid	30	75.00	10	25.00
Tetracycline	29	72.50	11	27.50
Clindamycin	21	52.50	19	47.50
Ciprofloxacin	21	52.50	19	47.50
Gentamicin	21	52.50	19	47.50
Levofloxacin	21	52.50	19	47.50
Fosfomycin	18	45.00	22	55.00
Moxifloxacin	18	45.00	22	55.00
Clarithromycin	11	27.50	29	72.50
Penicillin	7	17.50	33	82.50
T/S	5	12.50	35	87.50
Ampicillin	4	10.00	36	90.00

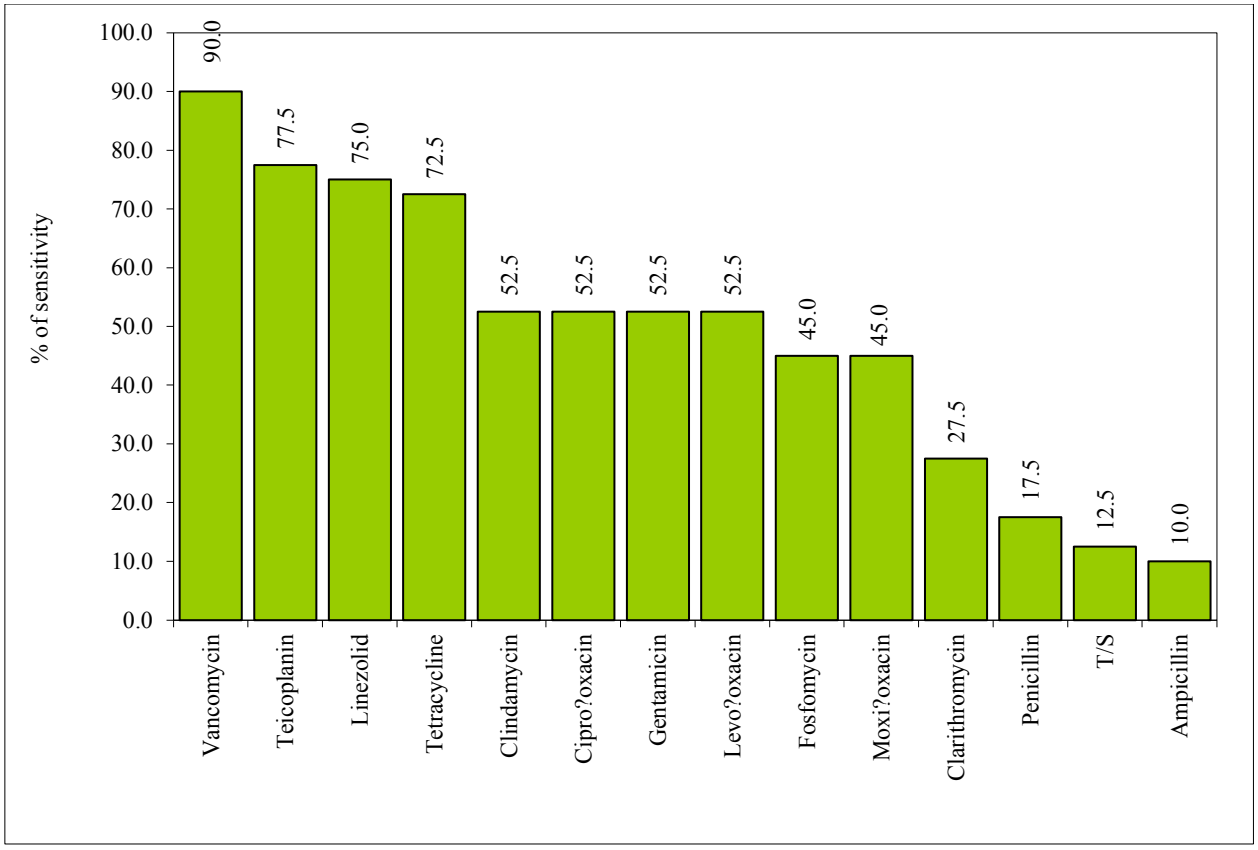

Figure 11: Sensitivity of Coagulase-negative Staphylococcus species in blood culture (n=40)

The above images are depicting the sensitivity patterns of the most common organism isolated from blood cultures i.e. coagulase negative staphylococcus species, in which it showed maximum sensitivity to vancomycin, followed by teicoplanin and linezolid. Least sensitivity is observed with ampicillin, T/S, and penicillin.

Table 19: Sensitivity of Klebsiella pneumoniae in ET culture (n=20)

Drugs	Sensitive	%	Resistance	%
Tigecycline	14	35.00	6	65.00
Colistin	7	17.50	13	82.50
Amikacin	5	12.50	15	87.50
Cefoxitin	4	10.00	16	90.00
Meropenem	4	10.00	16	90.00
P/T	4	10.00	16	90.00
Gentamicin	3	7.50	17	92.50
Imipenem	3	7.50	17	92.50
Levofloxacin	3	7.50	17	92.50
Moxifloxacin	3	7.50	17	92.50
Ampicillin	2	5.00	18	95.00
Cefepime	2	5.00	18	95.00
Cefotaxime	2	5.00	18	95.00
Ceftazidime	2	5.00	18	95.00
Cefuroxime	2	5.00	18	95.00
Ciprofloxacin	2	5.00	18	95.00
T/S	2	5.00	18	95.00
Tetracycline	2	5.00	18	95.00
Fosfomycin	1	2.50	19	97.50

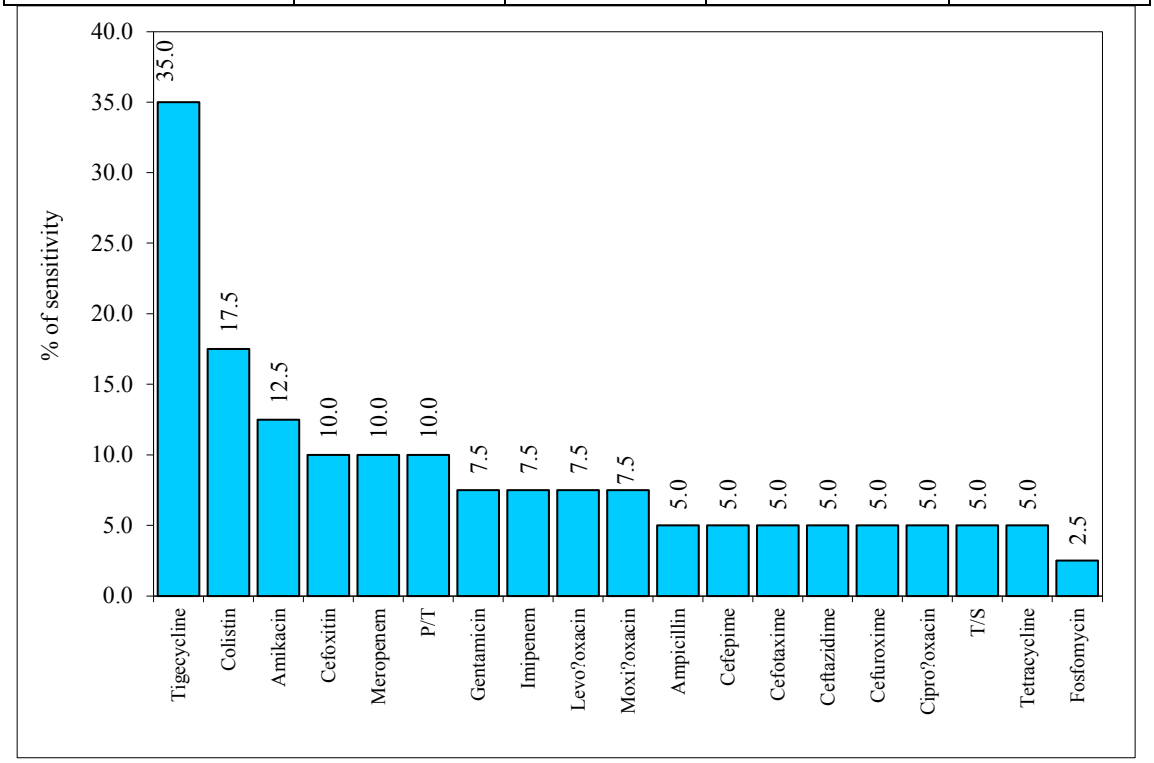

Figure 12: Sensitivity of Klebsiella pneumoniae in ET culture (n=20)

the above images are showing the sensitivity pattern of the most common organism isolated from ET CULTURE i.e. klebsiella pneumoniae in which it showed maximum sensitivity with tigecycline, colistin and amikacin. Least sensitivity is observed with Fosfomycin, tetracyclines and T/S.

Table 20: Sensitivity of Staphylococcus aureus in PUS culture (n=10)

Drugs	Sensitive	%	Resistance	%
Tetracycline	9	90.00	1	10.00
Fosfomycin	7	70.00	3	30.00
Teicoplanin	7	70.00	3	30.00
vancomycin	7	70.00	3	30.00
Ciprofloxacin	6	60.00	4	40.00
Levofloxacin	6	60.00	4	40.00
Gentamicin	5	50.00	5	50.00
Linezolid	5	50.00	5	50.00
T/S	4	40.00	6	60.00
Amikacin	3	30.00	7	70.00
Cefoxitin	3	30.00	7	70.00
Colistin	3	30.00	7	70.00
Imipenem	3	30.00	7	70.00
Moxifloxacin	3	30.00	7	70.00
Meropenem	3	30.00	7	70.00
Penicillin	3	30.00	7	70.00
Tigecycline	3	30.00	7	70.00
Ampicillin	2	20.00	8	80.00
Clindamycin	2	20.00	8	80.00
Nitrofurantoin	2	20.00	8	80.00
Norfloxacin	2	20.00	8	80.00
P/T	2	20.00	8	80.00
Cefepime	1	10.00	9	90.00
Ceftazidime	1	10.00	9	90.00
Cefuroxime	1	10.00	9	90.00
Clarithromycin	1	10.00	9	90.00

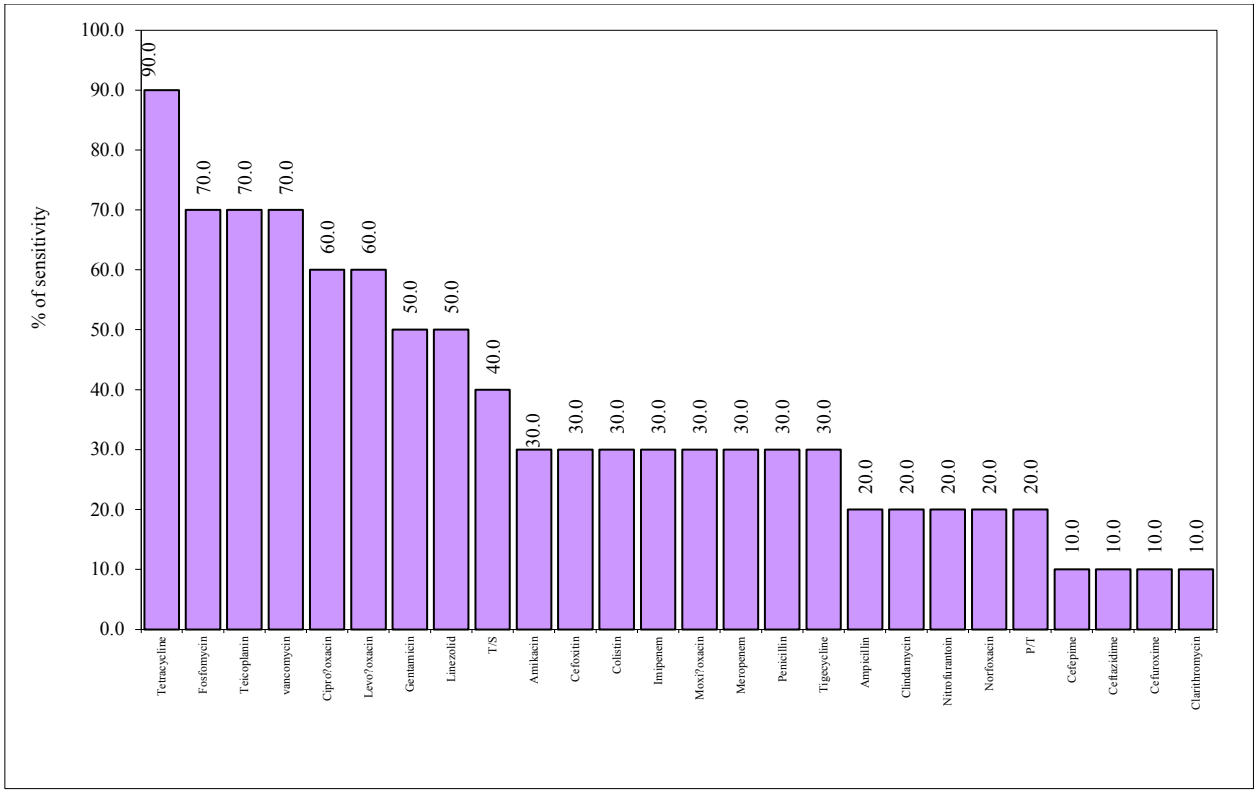

Figure 13: Sensitivity of Staphylococcus aureus in PUS culture (n=10)

The above images are showing the sensitivity pattern of the most common organism isolated from PUS CULTURE i.e. STAPHYLOCOCCUS AUREUS in which it showed maximum sensitivity with tetracyclines, Fosfomycin and teicoplanin. Least sensitivity is observed with clarithromycin, cefuroxime and ceftazidime.

Table 21: Sensitivity of Streptococcus pneumonia in Sputum culture (n=10)

Drugs	Sensitive	%	Resistance	%
Levofloxacin	6	60.00	4	40.00
Amikacin	4	40.00	6	60.00
Fosfomycin	4	40.00	6	60.00
Gentamicin	4	40.00	6	60.00
Moxifloxacin	4	40.00	6	60.00
Meropenem	4	40.00	6	60.00
Tetracycline	4	40.00	6	60.00
vancomycin	4	40.00	6	60.00
Clindamycin	3	30.00	7	70.00
Ciprofloxacin	3	30.00	7	70.00
Imipenem	3	30.00	7	70.00
Linezolid	3	30.00	7	70.00
T/S	3	30.00	7	70.00
Tigecycline	3	30.00	7	70.00
Teicoplanin	3	30.00	7	70.00
Clarithromycin	2	20.00	8	80.00
Nitrofurantoin	2	20.00	8	80.00
Penicillin	2	20.00	8	80.00
Ampicillin	1	10.00	9	90.00
Cefepime	1	10.00	9	90.00
Cefotaxime	1	10.00	9	90.00
Cefoxitin	1	10.00	9	90.00
Ceftazidime	1	10.00	9	90.00
Colistin	1	10.00	9	90.00

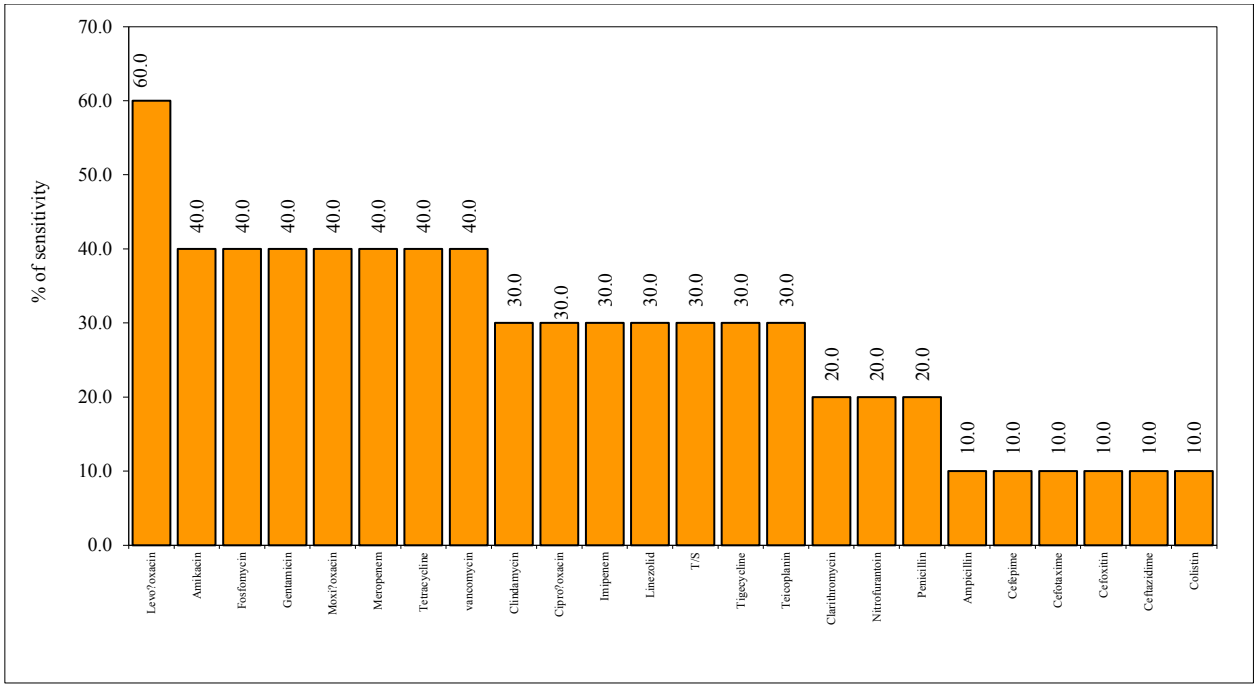

Figure 14: Sensitivity of Streptococcus pneumoniae in Sputum culture (n=10)

The above images are showing the sensitivity pattern of the most common organism isolated from SPUTUM CULTURE i.e. STREPTOCOCCUS PNEUMONIAE in which it showed maximum sensitivity with levofloxacin, amikacin and Fosfomycin. Least sensitivity is observed with colistin, ceftazidime and cefoxitin.

Table 22: Sensitivity of Escherichia coli in Urine culture (n=67)

Drugs	Sensitive	%	Resistance	%
Tigecycline	48	71.64	19	28.36
Fosfomycin	42	62.69	25	37.31
Nitrofurantoin	37	55.22	30	44.78
Amikacin	33	49.25	34	50.75
Imipenem	31	46.27	36	53.73
Colistin	29	43.28	38	56.72
Meropenem	29	43.28	38	56.72
Gentamicin	19	28.36	48	71.64
Cefoxitin	17	25.37	50	74.63
Tetracycline	13	19.40	54	80.60
Cefepime	8	11.94	59	88.06
Levofloxacin	8	11.94	59	88.06
P/T	8	11.94	59	88.06
Ciprofloxacin	7	10.45	60	89.55
Ceftazidime	6	8.96	61	91.04
Ampicillin	5	7.46	62	92.54
Cefuroxime	5	7.46	62	92.54
Moxifloxacin	5	7.46	62	92.54
Cefotaxime	3	4.48	64	95.52
T/S	3	4.48	64	95.52
Norfloxacin	2	2.99	65	97.01

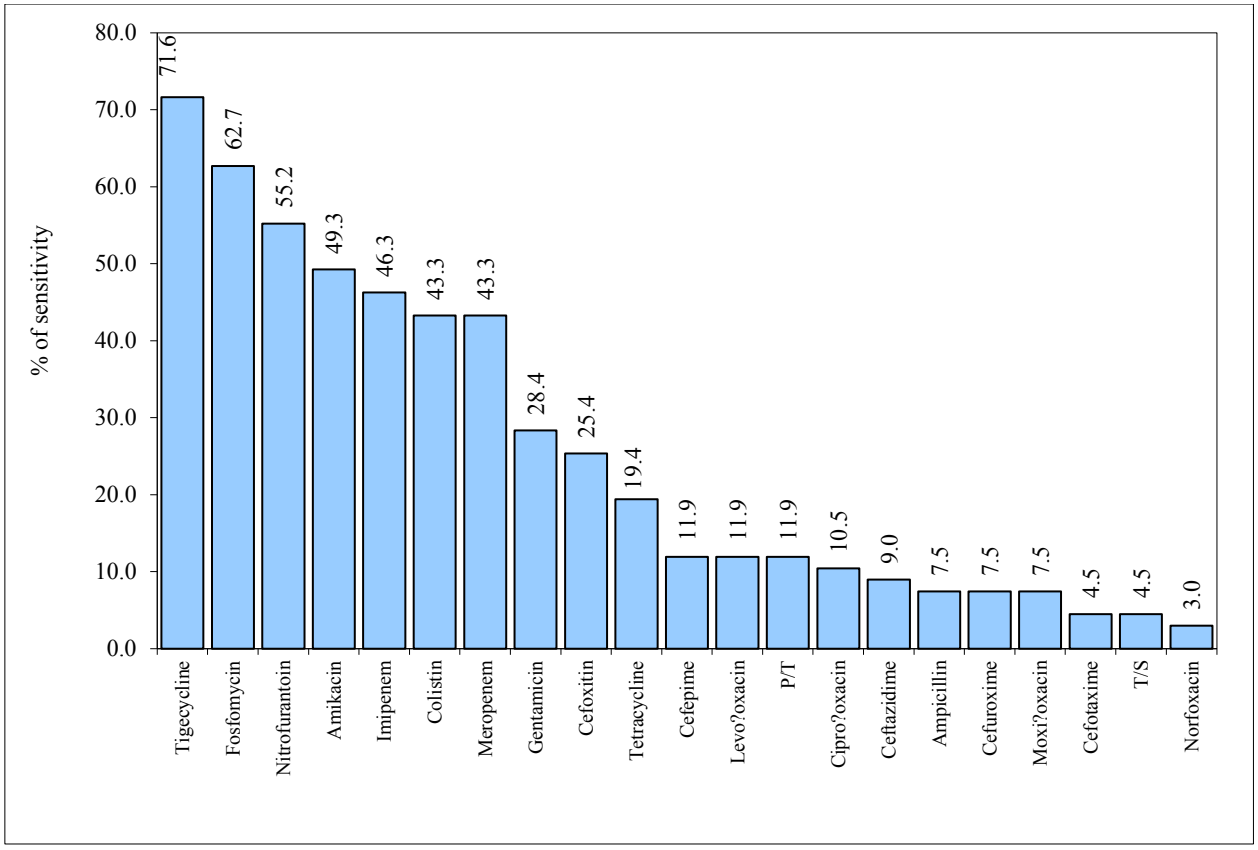

Figure 15: Sensitivity of Escherichia coli in Urine culture (n=67)

The above images are showing the sensitivity pattern of the most common organism isolated from URINE CULTURE i.e. ESCHERICHIA COLI in which it showed maximum sensitivity with tigecycline, Fosfomycin and nitrofurantoin. Least sensitivity is observed with norfloxacin, T/S and cefotaxime.

Table 23: Sensitivity of Escherichia coli as a whole (n=104)

Drugs	Sensitive	%	Resistance	%
Tigecycline	84	80.77	20	19.23
Fosfomycin	66	63.46	38	36.54
Amikacin	59	56.73	45	43.27
Imipenem	58	55.77	46	44.23
Meropenem	56	53.85	48	46.15
Colistin	45	43.27	59	56.73
Nitrofurantoin	43	41.35	61	58.65
Gentamicin	39	37.50	65	62.50
Cefoxitin	34	32.69	70	67.31
Tetracycline	28	26.92	76	73.08
Levofloxacin	21	20.19	83	79.81
Ciprofloxacin	14	13.46	90	86.54
P/T	13	12.50	91	87.50
Cefepime	12	11.54	92	88.46
Ceftazidime	10	9.62	94	90.38
Cefuroxime	8	7.69	96	92.31
Moxifloxacin	8	7.69	96	92.31
Ampicillin	7	6.73	97	93.27
T/S	7	6.73	97	93.27
Norfloxacin	5	4.81	99	95.19
Cefotaxime	4	3.85	100	96.15

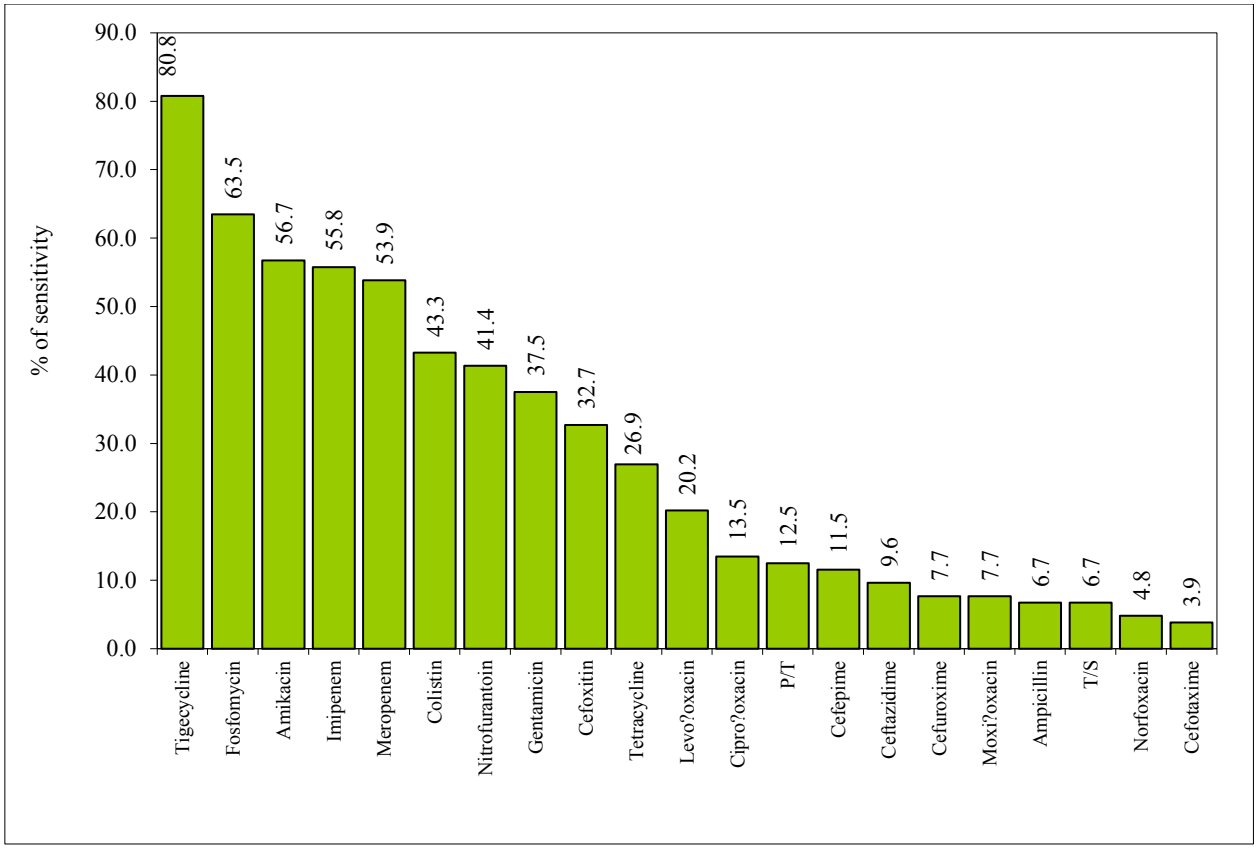

Figure 16: Sensitivity of Escherichia coli as a whole (n=104)

The above images are showing the sensitivity pattern of the most common organism isolated from all the cultures as a whole i.e. Escherichia coli in which it showed maximum sensitivity with tigecyclines, fosfomycin and amikacin. Least sensitivity is observed with cefotaxime, norfloxacin and T/S.

Table 24: Types and patterns of cultures with growth in diabetics

No	Growth in the culture	Blood culture	%	ET culture	%	PUS culture	%	Sputum culture	%	Urine culture	%	Total
1	Acinetobacter baumannii	4	9.76	1	14.29	0	0.00	1	14.29	4	10.53	10
2	Citrobacter species	0	0.00	0	0.00	0	0.00	0	0.00	1	2.63	1
3	Coagulase-negative Staphylococcus species	13	31.71	0	0.00	0	0.00	0	0.00	0	0.00	13
4	Enterobacter species	1	2.44	1	14.29	1	14.29	0	0.00	5	13.16	8
5	Enterococcus species	1	2.44	0	0.00	0	0.00	0	0.00	4	10.53	5
6	Escherichia coli	6	14.63	1	14.29	0	0.00	0	0.00	14	36.84	21
7	Klebsiella pneumonia	0	0.00	3	42.86	3	42.86	2	28.57	9	23.68	17
8	Methicillin Resistant Staphylococcus aureus	1	2.44	0	0.00	0	0.00	0	0.00	0	0.00	1
9	Proteus species	0	0.00	0	0.00	0	0.00	0	0.00	1	2.63	1
10	Pseudomonas species	0	0.00	1	14.29	0	0.00	0	0.00	0	0.00	1
11	Staphylococcus aureus	2	4.88	0	0.00	3	42.86	0	0.00	0	0.00	5
12	Staphylococcus epidermidis	5	12.20	0	0.00	0	0.00	0	0.00	0	0.00	5
13	Staphylococcus haemolyticus	7	17.07	0	0.00	0	0.00	0	0.00	0	0.00	7
14	Streptococcus pneumonia	1	2.44	0	0.00	0	0.00	4	57.14	0	0.00	5
	Total	41	100.00	7	100.00	7	100.00	7	100.00	38	100.00	100

Among diabetics, most common organism isolated in blood cultures is CONS, urine cultures is E. coli, pus cultures is klebsiella, sputum cultures is streptococcus, ET cultures is klebsiella, Similar to those observed in the general population.

Table 25: Sensitivity of Coagulase-negative Staphylococcus species in Blood culture (n=13 with DM)

Drugs	Sensitive	%	Resistance	%
Vancomycin	12	92.31	1	7.69
Linezolid	9	69.23	4	30.77
Tetracycline	9	69.23	4	30.77
Teicoplanin	9	69.23	4	30.77
Clindamycin	8	61.54	5	38.46
Ciprofloxacin	6	46.15	7	53.85
Gentamicin	6	46.15	7	53.85
Levofloxacin	6	46.15	7	53.85
Fosfomycin	5	38.46	8	61.54
Moxifloxacin	5	38.46	8	61.54
Clarithromycin	4	30.77	9	69.23
Ampicillin	2	15.38	11	84.62
Penicillin	2	15.38	11	84.62
T/S	1	7.69	12	92.31

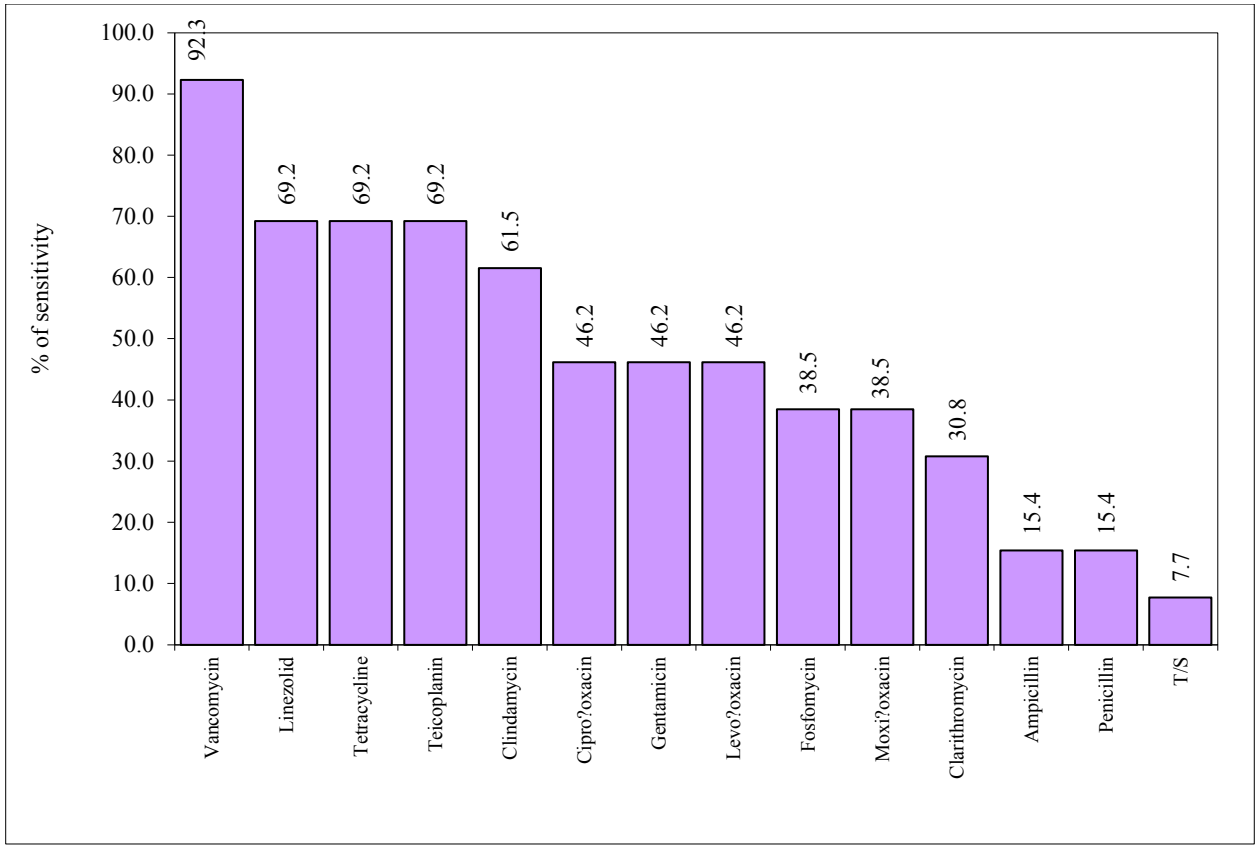

Figure 17: Sensitivity of Coagulase-negative Staphylococcus species in Blood culture (n=13 with DM)

CONS , most common organism isolated in blood cultures in patients with diabetes showed more sensitivity to vancomycin and least sensitivity to T/S.

Table 26: Sensitivity of Escherichia coli species in Urine culture (n=14 with DM)

Drugs	Sensitive	%	Resistance	%
Fosfomycin	12	85.71	2	14.29
Tigecycline	12	85.71	2	14.29
Nitrofurantoin	10	71.43	4	28.57
Amikacin	9	64.29	5	35.71
Colistin	9	64.29	5	35.71
Imipenem	6	42.86	8	57.14
Meropenem	6	42.86	8	57.14
Gentamicin	4	28.57	10	71.43
P/T	4	28.57	10	71.43
Tetracycline	4	28.57	10	71.43
Cefoxitin	3	21.43	11	78.57
Cefepime	2	14.29	12	85.71
Ampicillin	1	7.14	13	92.86
Cefotaxime	1	7.14	13	92.86
Ceftazidime	1	7.14	13	92.86
Cefuroxime	1	7.14	13	92.86
T/S	1	7.14	13	92.86

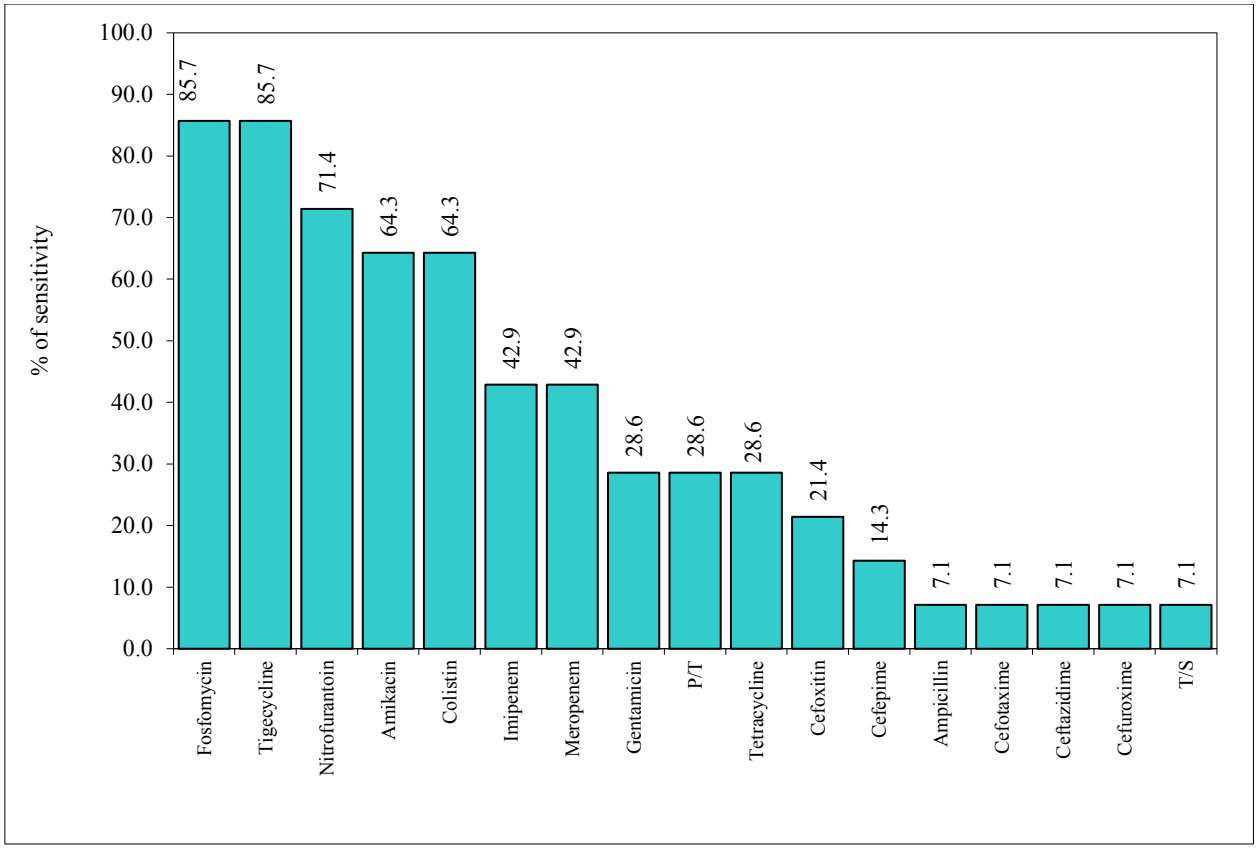

Figure 18: Sensitivity of Escherichia coli species in Urine culture in diabetics (n=14 with DM)

E.coli, most common organism isolated from urine cultures of diabetes patients showed maximum sensitivity to fosfomycin and least sensitivity to T/S

DISCUSSION

The primary objective of any ICU should be to reduce antibiotic resistance. This is in turn possible with formulating a proper empirical antibiotic regimen which is specific to that particular icu setting or to that particular region. This will result in a better patient outcome while also reducing the irrational usage of antibiotics and also reducing the length of the patient's stay in the ICU. It is essential to understand the bacterial profile and antibiogram of certain ICUs in every hospital to achieve this.

In present study total of 417 positive cultures of the patients admitted in the medical icu during a one-year period fulfilling inclusion criteria were included.

Among them 62.8% were male patients and 37.2% were female patients, showing male preponderance with the male to female ratio of 2:1. The mean age of patients in present study was 55.80 (±17.81) yrs of age. Majority of the patients in present study were in age group of 61-80 years (36.69%), followed by age of 41-60yrs in 34.53%, 16-40 years of age in 21.34% patients.

Orsi GB et al,[67] also reported similar results in which male accounted for 64.8% & females accounted for 35.2% . In another study done by Derek et al 46, Males (56.1%) outnumbered females

On assessment of comorbid conditions present among the patients, 25.9% were with hypertension, 23.98% were with diabetes mellitus and 21.34% were with both hypertension and diabetes mellitus. Which showed no significant association between incidence of infections and comorbidities assessed in our study.

On assessment of outcome of the patients, 63.31% of patients in present study were improved and discharged, 23.26% were expired due to multi-organ failure and 13.43%

patients showed no change in the health status in ICU. This finding stress upon the significant mortality rate which is around 23%, which can be reduced to a certain extent by usage of appropriate antibiotics at right time. This also throws light on the importance of the need for local antibiograms.

On comparing the different types of positive cultures taken for analysis, 42.21% are blood cultures, 37.89% are urine cultures, 7.19% are ET cultures, 6.47% are pus cultures and 6.24% are sputum cultures, showing the higher prevalence of blood cultures or septicemia. The existence of living microorganisms in blood has significant clinical implications. A positive blood culture containing a clinically relevant microbe reflects either a failure of host defences to confine an infection at its major focus or a failure of the clinician to properly destroy, drain, excise, or otherwise eliminate the infection's primary focus. The presence of bacteremia or fungemia is also a sign of widespread infection and, as such, often implies a worse prognosis than localised illness. However, a positive blood culture is not necessarily clinically significant since contamination might occur, or the positive result may indicate the temporary and self-limited presence of microbes in the blood.

Among the growth in various samples sent for assessment, we found Escherichia coli was the most common organism with 24.94% prevalence, followed by Klebsiella pneumonia (16.55%), Coagulase-negative Staphylococcus species (9.83%), Enterobacter species (9.35%), staph haemolyticus (8.39%) and Acinotobacter baumannii (8.15%) with predominance of gram negative infections overall.

Pawar SK et al., documented bacterial distribution with the highest being Klebsiella spp. (n = 466). This was followed by Acinetobacterspp. (n = 377), E. coli (n = 368), P. aeruginosa (n = 311), and S. aureus (n = 249) with the least isolated being Salmonellaspp. (n = 2). [62]

In a study done by Sarraf et al., Staphylococcus aureus accounted for 31.8 percent of the pathogenic organisms identified, followed by Escherichia coli (20.5 percent), Pseudomonas (18.2 percent), and others.

Peripi SB documented Escherichia coli (36 percent), Klebsiella pneumoniae (16 percent), Staphylococcus aureus (29 percent), Enterococcus faecalis (9 percent), and Pseudomonas aeruginosa (10 percent).[57]

On comparison of the type of specimen with Age wise distribution, between the gender, across the various outcome and comorbidities there was no significant difference in the culture specimen type ($p>0.05$)

A primary source of bacteraemia was identified in 64.2% of all the positive cultures. Culture or clinical evidence of a main focus were used to confirm source. The respiratory in 28.4% (pneumonia, copd, lung abscess, chronic bronchitis, and bronchiectasis) followed by genitourinary tracts in 12% (pyelonephritis, cystitis, urethritis, vaginitis) followed by gastrointestinal sources in 10.8% (bowel, biliary tract, peritoneal fluid, abscesses) were the most common sources. Among urine cultures cystitis 82(51.9%) is found to be the most common cause. Ventilator-associated pneumonia (VAP) is found to be the predominant cause among ET cultures with prevalence of 4.5% overall, and 53.9% among all the ET cultures with klebsiella pneumoniae as the most common causative organism.

In a study done by Melvin P. WeinsteinL, they observed that most common sources of infection to be respiratory, genitourinary and gastrointestinal tracts with in nearly 40% of patient's source could not be identified[70].

On assessment of overall drug sensitivity and resistance for the various organisms isolated in all the patients, it was found that the sensitivity was found maximum to the Fosfomycin

(35.97%), followed by Tigecycline (34.05%), Tetracycline (31.89%), Gentamicin (31.18%), Levofloxacin (29.74%), vancomycin (27.82%), Amikacin (27.10%), Meropenam (25.18%), ciprofloxacin (24.22%). Coming to the resistance patterns, it was found that Amoxyclav showed the maximum resistance (100), followed by Cefuroxime in 94.48%, cefotaxime in 84.48%, ampicillin in 93.05%, norfloxacin in 95.44%, pencillin in 94.96%, clarithromycin in 92.57%, P/T in 93.29% and T/S in 92.9%.

considering the type of culture and the specific isolates, various samples showed different organism patterns.

In Blood cultures Coagulase-negative Staphylococcus species was common isolate (22.73%), followed by 19.32% with staph heaemolyticus, 18.18% with Escherichia coli, 6.25% with Staph epidermidis and Enterobacter species. Among Gram-negative bacteria, the most common isolates were Escherichia coli (19.3%), Typhi (9.7%), and Klebsiella spp. (6.9%).

Penicillin and erythromycin resistance was highest among staphylococci in our investigation. Gentamicin, amoxyclav, and ciprofloxacin resistance was highest in Enterobacteriaceae.

Infections in the blood stream were dominated by Gram-positive bacteria. Resistance to aminoglycosides and cephalosporins was particularly prevalent in Gram-negative bacteria. As a result, fast microbiological identification and antibiotic susceptibility factors become important for early antimicrobial therapy commencement.[64]

Barai L et al, (2010) states that Major organisms isolated from blood were Pseudomonas sp.(51.7%) and Acinetobacter sp.(18.4%).[52] In study by Tiwari et al., blood culture reports, the most commonly isolated bacteria was Staphylococcus aureus.[54]

In ET cultures, majority were positive for Klebsiella pneumonia (66.67%) followed by 10% showing Escherichia coli, 6.67% showing Acinetobacter baumannii and 3.33% with proteus species and pseudomonas species.

The Pus culture showed the pattern of majority with Staphylococcus aureus in 37.04% followed with Klebsiella pneumonia in 29.63%, 14.81% with pseudomonas species and 7.41% with Enterobacter species and Escherichia coli.

On sputum assessment, it was found that 38.46% of cases showed positive for Streptococcus pneumonia, followed by 26.92% with Klebsiella pneumonia, 19.23% with Haemophilus influenza and 11.54% with staphylococcus aureus.

In study by Sharma et al., Sputum culture positivity was observed in 78 cases (48.7%). S. pneumoniae (13%) was the most common organism isolated. However collectively, gram negative bacteria (GNB) were the predominant etiological agent (35.7%). Among GNB, E. coli (9.4%) was the most common isolated organism followed by Acinetobacter (8.1%), P. aeruginosa (7.5%) and Klebsiella (6.3%). Spo2< 80% ($p = 0.002$) and mucopurulent/purulent sputum ($p < 0.05$) had significant association with sputum positivity. S. pneumoniae, H. influenzae and M. catarrhalis were sensitive to antibiotics like fluoroquinolones, Cephalosporins, Aminoglycoside and Piperacillin-tazobactam. However, GNB showed significant resistance ($p < 0.05$) to the above antibiotic groups. Colistin and Polymyxin B were the only effective antibiotics against all the isolated organisms.[68]

In urine cultures, Escherichia coli was the most common organism isolated seen in 42.41% cases followed by 17.09% showed presence of Klebsiella pneumonia, 14.56% with Enterobacter species, 8.86% with Enterococcus species and 6.33% with Acinetobacter baumannii.

In Shalini et al., study, 170 urine culture sensitivity reports were analysed. Amikacin and nitrofurantoin resistance was found in more than 80% of the isolates, whereas norfloxacin, ciprofloxacin, and levofloxacin resistance was found in more than 70%. Resistance to cotrimoxazole (81.82 percent), amoxicillin (77.42 percent), and amoxyclav was quite strong (64.34 percent). Amikacin sensitivity was 98.91 percent (91), while Nitrofurantoin sensitivity was 93.48 percent in E. coli (86). Seventy-five percent of patients Minocycline was shown to be effective against E. coli isolates, indicating that it might be used to treat urinary tract infections in outdoor patients.[56] Barai L et al, (2010) states that Major organisms isolated from urine was Candida spp (43.3%)and E. coli (19.3%).[52]

Radji M et al., (2011) to assess the antibiotic sensitivity and resistance patterns of microbial pathogens in intensive care unit. Specimens were taken from 385 individuals who had received antibiotic therapy, of whom 249 (64.68 percent) had positive cultures and 136 (35.32 percent) had negative cultures. Pseudomonas aeruginosa was the most common isolate which constituted 26.5%, followed by Klebsiella pneumonia constituting 15.3%, and Staphylococcus epidermidis constituting 14.9 percent. Cephalexin to 95.3%, cefotaxime to 64.1%, and ceftriaxone resistance was found in a significant percentage of P. aeruginosa isolates i.e, around 60.9 percent. Antibiotics that were most effective against P. aeruginosa were amikacin (84.4%), imipenem (81.2%), and meropenem (75.0 percent). Cephalexin (86.5%), ceftriaxone (75.7%), ceftazidime (73.0%), and cefpirome (73.0 percent) resistance was found in K. pneumoniae [55]

Sensitivity pattern of the common isolated organisms in various cultures:

Staphylococcus species: They showed the highest sensitivity to the Vancomycin (90%), followed by 77.5% with Teicoplanin, 75% with Linezolid, 72.5% with Tetracycline, 52.5% to Clindamycin, Ciprofloxacin, gentamicin and Levofloxacin. The maximum

resistance was seen with ampicillin in 90%, 87.5% showed with T/S, 82.5% with penicillin, 72.5% with clarithromycin and 55% with Moxifloxacin and Fosfomycin.

In study by Tiwari et al., S. aureus isolates were sensitive to vancomycin. Around two-third isolates were sensitive to oxacillin, chloramphenicol, gentamicin and ciprofloxacin. Almost All isolates of Salmonella typhi were found to be sensitive to ceftriaxone and cefixime. The sensitivity pattern of the isolates was found to be 93% with ciprofloxacin, 88% with chloramphenicol, 80% with cotrimoxazole, and 75% with amoxicillin.[54] Tiwari et al., in their study documented that in the positive pus culture reports, the most common i.e, 342 samples and 35.5% organisms isolated were S. aureus which were 100% sensitive to vancomycin, 75% to oxacillin and 87% to clindamycin.[54]

Klebsiella pneumonia: showed a sensitivity of 35% to Tigecycline, followed with 17.5% with Colistin, 12.5% with Amikacin and 10% with Cefoxitin, Meropenem and P/T. The resistance was seen with the Fosfomycin in 97.5%, 95% showed resistance to Tetracycline, ciprofloxacin, Cefuroxime, ceftazidime, cefepime, ampicillin, 82.5% showed resistance with Moxifloxacin, levofloxacin, Imipenem and Gentamicin.

In study by Tiwari et al., Klebsiella showed 100% sensitivity towards imipenem, 43% to piperacillin/tazobactam, 21% to cefotaxime, and 5% to ampicillin. The E. coli also showed 100% sensitivity towards imipenem, 75% to amikacin, 60% to piperacillin/tazobactam, 20% to ceftriaxone, and 5% to amoxicillin.[54]

Staphylococcus aureus : The highest sensitivity was shown to Tetracycline (90%) followed with 70% with Fosfomycin ,teicoplanin, and vancomycin, 60% with ciprofloxacin and levofloxacin. Lowest sensitivity was seen with ceftazidime and cefepime which is 10%. The highest resistance was seen with ceftazidime and cefepime

with 90%, followed with 80% with P/T, norfloxacin, nitrofurantoin, clindamycin and ampicillin. The least resistance was seen with tetracycline.

In a study done by Sarraf et al., Carbenicillin, Imipenem, Vancomycin, and Amoxiclav were shown to be the most sensitive antibiotics against S. aureus, whereas Cefotaxime and Ceftriaxone were the least effective.

Streptococcus pneumoniae: The highest sensitivity was seen with levofloxacin in 60% patients, followed with 40% showed sensitivity to Amikacin, Fosfomycin, gentamicin, Moxifloxacin, meropenem, tetracycline and vancomycin. The lowest sensitivity and maximum resistance was seen with colistin, ceftazidime, cefotaxime, cefepime, ampicillin (10% sensitivity and 90% resistance) followed with resistance of 80% with nitrofurantoin, penicillin, clarithromycin and lowest resistance of 40% was seen with levofloxacin.

Escherichia coli: The study showed maximum sensitivity of 71.64 % with tigecycline followed with 62.69% with fosfomycin, 55.2% with nitrofurantoin, 49.25% with Amikacin, 46.27% with Imipenem, 43.28% with colistin and meropenem. Lowest sensitivity and maximum resistance was seen with norfloxacin, T/S, cefotaxime, Moxifloxacin. Cefuroxime, ampicillin and ceftazidime with more than 90% resistance.

In study by Tiwari et al., The Escherichia coli isolates in blood showed 98% sensitivity with imipenem, 92% with amikacin, 84% with cefeperazone & sulbactam, and 8% to ampicillin. A maximum sensitivity to amikacin and imipenem was also found in some other studies.[54,69] The E. coli isolates showed 100% sensitivity towards imipenem, 83% for cefaperazone-sulbactum, and 45% for piperacillin-tazobactam, 15% for ciprofloxacin and 11% for ampicillin. Other isolates like Klebsiella showed 99% sensitivity to imipenem and 66% to amkacin,[54]. In a study done by Sarraf et al., E. coli showed more sensitivity to

Imipenem, gentamycin, Chloramphenicol and least sensitivity to most commonly used drugs like amoxiclav, Cefotaxime and Ciprofloxacin.

Among the diabetes mellitus patients,

Blood culture was positive for Coagulase negative staphylococcus species, ET and pus culture showed Klebsiella pneumonia. The sensitivity of Coagulase-negative Staphylococcus species in Blood culture was seen with vancomycin with 92.31%, followed with 69.23% with linezolid, tetracycline, and teicoplanin, 61.54% with clindamycin. Lowest sensitivity and higher resistance was seen with T/S with 92.31% resistance, followed with 84.62% with penicillin, ampicillin, 69.23% with clarithromycin and 61.54% with fosfomycin and Moxifloxacin. Sensitivity of Escherichia coli species in Urine culture of Diabetes patients was found to be 85.71% to Fosfomycin and tigecycline followed with 71.43% to nitrofurantoin, 64.29% with Amikacin and colistin, 42.86% with Imipenem and meropenem. The highest resistance was seen with 92.86% with ceftazidime, cefotaxime and ampicillin, 85.71% with cefepime, 78.57% with cefoxitin and 71.43% with tetracycline, P/T and gentamicin.

CONCLUSION

In our present study, total 417 positive cultures of the patients admitted to medical ICU during one year study period were included.

- Among them 62.8% were male patients and 37.2% were female patients with greater male predominance.
- The elderly population, i.e., those aged 61 to 80 years, has a greater prevalence of positive cultures with a rate of 36.6 %.
- It is observed that there is no significant correlation discovered between the culture positivity and common comorbidities such as diabetes and hypertension.
- On grouping according to the type of culture, majority are blood cultures 176 (42.21%) followed by urine cultures 158 (37.89%) , ET cultures 30(7.19%), pus cultures 27(6.47%) and sputum cultures 26(6.24%) in descending order of their prevalence.
- The common causes of blood cultures was identified to be respiratory diseases in 28.4% (pneumonia, copd, lung abscess, chronic bronchitis, and bronchiectasis) followed by genitourinary sources in 12% (pyelonephritis, cystitis, urethritis, vaginitis) followed by gastrointestinal sources in 10.8% (bowel, biliary tract, peritoneal fluid, abscesses).
- Among urine cultures cystitis 82(51.9%) is found to be the most common cause.
- Ventilator-associated pneumonia (VAP) is found to be the predominant cause among ET cultures with prevalence of 4.5% overall, and 53.9% among all the ET cultures with klebsiella pneumoniae as the most common causative organism.

- Overall among all the cultures most common organism isolated is Escherichia coli (24.94%) followed by klebsiella pneumonia(16.55%), coagulase negative staphylococcus species(9.83%) and Enterobacter species(9.35%) with predominance of gram negative infections.

- Analyzing the sensitivity and resistance patterns of the organisms isolated to various commonly used antibiotics, it is observed that maximum sensitivity is found with fosfomycin , followed by tigecycline, tetracycline, gentamycin, levofloxacin, vancomycin and amikacin. On the other hand maximum resistance is seen with amoxiclav which is approximately 100% followed by 1st and 2nd generation cephalosporins, ampicillin, norfloxacin, penicillin and clarithromycin.

- Considering the mortality patterns, maximum mortality is seen with ET cultures owing to its severity and association with MODS, whereas majority of patients with positive blood cultures improved.

Also the above study done clearly shows,

- The need of hour is to generate the local antibiogram which will help in formulating and handling the patients with appropriate medication. This also will aid to regulate the antimicrobial use among the clinicians.
- Optimal antibiotic usage in ICUs is critical for improving patient outcomes and the prevention of multidrug resistant organisms
- This is possible through strict implementation of an antibiotic policy, and an antimicrobial stewardship programme that includes rotational, restricted, and combinational antimicrobial use.

- The empirical and the indiscriminate use of antibiotics should be avoided in order to curtail the emergence and the spread of drug resistance among nosocomial pathogens.
- The need for more regional studies on microbial patterns and antibiograms in various icus's across the world. As they differ widely from place to place due to evolving resistance patterns of the organisms.
- This helps in formulating a basic empirical regimen to be started on admission before the culture reports come, which further helps in better patient recovery and improved mortality rates.
- Cycling or rotation of an antibiotic class or a particular member of a class with another class or a specific member of that class that demonstrates a comparable spectrum of action should be done on a regular basis.

SUMMARY

ICUs, globally, are a source of drug resistant organisms. The rate of resistance in the ICU is several times more when compared with the general healthcare setting.

This study conducted in KLES Prabhakar Kore Hospital and Research Centre, a tertiary care hospital in Belagavi, north Karnataka region is aimed to assess the incidence of bacterial infections and antibiotic sensitivity pattern of culture positive infections in ICU. As a result, it would serve as a guidance for initiating empirical antibiotic therapy, before culture reports are available. In our study a total of 417 patients admitted to medical ICU were included. Among them 62.8% were male patients and 37.2% were female patients with mean age of patients being 55.80±17.81yrs of age. Various sample growths were observed, in sequence, Escherichia coli was the most common organism found (24.94 percent), followed by Klebsiella pneumonia (16.55%), Coagulase-negative Staphylococcus species (9.83%), Enterobacter species (9.35%), Staphylococcus haemolyticus (8.39%) and Acinotobacter baumannii (8.15%). The antibiotic amoxiclav showed 100% resistance, followed by cefuroxime (94.48%), cefotaxime (84.48%), ampicillin (93.05%), norfloxacin (95.44%), pencillin (94.96%), clarithromycin (92.57%), Piperacillin/tazobactam (93.29%) and Trimethoprim/Sulfamethoxazole (92.9%).

The increasing trend of antibiotic resistance among the hospitalized patients in the ICU setting is alarming. The need of the hour is to generate the local empirical antibiogram, which will help in handling the patients with appropriate medications.

Our study throws light on the concerning rate at which antibiotic resistance is occurring, and the urgency with which one must combat this, with respect to usage of antibiotics not only correctly, according to the local antibiogram, but the need for omission whenever it

is deemed possible. If the inadvertent usage of antibiotics continues, the future of healthcare is grave, and the need for even stronger antibiotics than the ones that already exist maybe required to combat these super bugs.

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ANNEXURE 1- INSTITUTIONAL

ETHICAL CLEARANCE CERTIFICATE

K.L.E. ACADEMY OF HIGHER EDUCATION AND RESEARCH
(Deemed - to-be-University)
Accredited 'A' Grade by NAAC (2nd Cycle) Placed in Category 'A' by MHRD (GoI)
JAWAHARLAL NEHRU MEDICAL COLLEGE,
NEHRU NAGAR, BELAGAVI-590010 (KARNATAKA-INDIA)
Website: http//www.jnmc.edu
E-Mail : dome@jnmc.edu
Phone: (+ 91-(0)831 Office : 2472550
Principal: 2471701
Fax No. +91 (0)831 – 2470759

Ref: MDC/DOME/ 252. **Date: 24/12/2019**

To,
BG0119007
PG student in Medicine,
J.N.Medical College,
BELAGAVI.

Sub: Institutional Ethical Clearance for the study.

With reference to the above, we wish to inform you that your proposed research project titled **"CLINICAL STUDY OF BACTERIAL PROFILE AND ANTIBIOTIC SENSITIVITY PATTERN OF ISOLATES IN MEDICAL ICU "**, is ethical and justifiable. The proposed research project has been cleared by the JNMC Institutional Ethics Committee on Human Subjects Research.

(Dr. Anita Dalal)
Member Secretary
JNMC Institutional Ethics Committee
on Human Subjects Research,
J.N.Medical College, Belagavi.

(Dr. Roopa M Bellad)
Chairman,
JNMC Institutional Ethics Committee
on Human Subjects Research,
J.N.Medical College, Belagavi.

ANNEXURE 2- CONSENT FORM ENGLISH/ KANNADA/ MARATHI

INFORMED CONSENT

"CLINICAL STUDY OF BACTERIAL PROFILE AND ANTIBIOTIC SENSITIVITY PATTERN OF ISOLATES IN MEDICAL ICU"

Principal Investigator:-

Post Graduate Student,

Department Of General Medicine,

JNMC, Belagavi.

Guide:-

REGISTRAR & HEAD OF A UNIT

Department of General Medicine,

JNMC, Belagavi.

Introduction and Purpose:-

Antibiotic resistance is a major world-wide problem in icu. It has been realized that spread of drug resistant organisms in the icu is related to widespread use of antibiotics. The rate of resistance in icu is several folds higher than general hospital setup.

Knowing the information about bacterial profile and antibiotic resistance is of particular importance since there is considerable geographic variation from place to place in the rates of resistance to various antimicrobials.

This information may help in formulating empirical regimen and in adopting and implementing antibiotic stewardship programmes.

You are being asked to enroll yourself in the above said research as you are eligible for participation in this study being conducted at J N Medical college, KLES Dr. Prabhakar Kore Charitable Hospital, Belagavi from Jan 2020 to Dec 2020 conducted by post graduate student in the Dept. of Medicine.

Procedure:

If you agree to be part of the research study, you will be asked the relevant history and will be subjected to relevant clinical examination and investigations. You will also have to give blood samples for the necessary investigations.

Risk and Benefits:

The only risk and possible discomfort you might get is while taking blood from your arm for the investigations. It may cause swelling, pain, redness (rarely happens) at the site from where the blood is drawn.

You may not be benefitted by these investigations but you will be part of this study which is going to be useful to others in the future.

Alternatives:

Taking part in this study is voluntary. You may choose not to take part in this study.

If you decide to take part you can later change your mind and withdraw from the study. Your decision will not change the present or future health care or other services that you receive. The study doctor or sponsor may stop your participation in this study at any time.

If you choose not to take part in the study, you will receive the standard treatment for patients with your condition.

Privacy and Confidentiality:

All information collected about you during the course of this study will be kept confidential to the extent permitted by law. The code numbers will identify you in this research record. Information from this study may be published but your identity will be confidential in any publication.

Institution / Sponsor's policy:

Does not apply to this research

Financial incentives for participation:

You will not be paid / offered any gifts /incentives for participating in the study.

Authorization to publish the results:

The results of the study would be forwarded to the KLE University, Belagavi as part of requirement towards the completion of MD degree, review and publishing.

ತಿಳುವಳಿಕೆಯ ಸಮ್ಮತಿ

"ಕ್ಲಿನಿಕಲ್ ಸ್ಟಡಿ ಆಫ್ ಬ್ಯಾಕ್ಟೀರಿಯಲ್ ಪ್ರೊಫೈಲ್ ಮತ್ತು ಆಂಟಿಬಯೋಟಿಕ್ ಸೆನ್ಸಿಟಿವಿಟಿ ಪ್ಯಾಟರ್ನ್ ಆಫ್ ಐಸೊಲೇಟ್ಸ್ ಇನ್ ಮೆಡಿಕಲ್ ಐಕು"

ಪ್ರಧಾನ ತನಿಖಾಧಿಕಾರಿ: -
ಸ್ನಾತಕೊತ್ತರ ವಿದ್ಯಾರ್ಥಿ,
ಜನರಲ್ ಮೆಡಿಸಿನ್ ಇಲಾಖೆ,
ಜೆಎನ್ಎಂಸಿ, ಬೆಳಗಾವಿ.

ಮಾರ್ಗದರ್ಶಿ: -
ಉಪ ಪ್ರಾಂಶುಪಾಲರು ಮತ್ತು ಎ ಘಟಕದ ಮುಖ್ಯಸ್ಥರು
ಜನರಲ್ ಮೆಡಿಸಿನ್ ಇಲಾಖೆ,
ಜೆಎನ್ಎಂಸಿ, ಬೆಳಗಾವಿ.

ಪರಿಚಯ ಮತ್ತು ಉದ್ದೇಶ: -
ಪ್ರತಿಜೀವಕ ನಿರೋಧಕತೆಯು ಐಸುವಿನಲ್ಲಿ ವಿಶ್ವವ್ಯಾಪಿ ಪ್ರಮುಖ ಸಮಸ್ಯೆಯಾಗಿದೆ. ಐಸುವಿನಲ್ಲಿ ಆಷಧ ನಿರೋಧಕ ಜೀವಿಗಳ ಹರಡುವಿಕೆಯು ಪ್ರತಿಜೀವಕಗಳ ವ್ಯಾಪಕ ಬಳಕೆಗೆ ಸಂಬಂಧಿಸಿದೆ ಎಂದು ತಿಳಿದುಬಂದಿದೆ. ಐಸುವಿನಲ್ಲಿನ ಪ್ರತಿರೋಧದ ಪ್ರಮಾಣವು ಸಾಮಾನ್ಯ ಆಸ್ಪತ್ರೆ ಸೆಟಪ್ಗಿಂತ ಹಲವಾರು ಪಟ್ಟು ಹೆಚ್ಚಾಗಿದೆ.

ಬ್ಯಾಕ್ಟೀರಿಯಾದ ಪ್ರೊಫೈಲ್ ಮತ್ತು ಪ್ರತಿಜೀವಕ ನಿರೋಧಕತೆಯ ಬಗ್ಗೆ ಮಾಹಿತಿಯನ್ನು ತಿಳಿದುಕೊಳ್ಳುವುದು ವಿಶೇಷ ಪ್ರಾಮುಖ್ಯತೆಯನ್ನು ಹೊಂದಿದೆ ಏಕೆಂದರೆ ವಿವಿಧ ಆಂಟಿಮೈಕ್ರೊಬಿಯಲ್ಗಳಿಗೆ ಪ್ರತಿರೋಧದ ದರಗಳಲ್ಲಿ ಸ್ಥಳದಿಂದ ಸ್ಥಳಕ್ಕೆ ಸಾಕಷ್ಟು ಭೌಗೋಳಿಕ ವ್ಯತ್ಯಾಸವಿದೆ.

ಈ ಮಾಹಿತಿಯು ಸಾಮ್ರಾಜ್ಯಶಾಹಿ ಕಟ್ಟುಪಾಡುಗಳನ್ನು ರೂಪಿಸುವಲ್ಲಿ ಮತ್ತು ಪ್ರತಿಜೀವಕ ಉಸ್ತುವಾರಿ ಕಾರ್ಯಕ್ರಮಗಳನ್ನು ಅಳವಡಿಸಿಕೊಳ್ಳಲು ಮತ್ತು ಕಾರ್ಯಗತಗೊಳಿಸಲು ಸಹಾಯ ಮಾಡುತ್ತದೆ.

ಜೆ.ಎನ್. ಮೆಡಿಕಲ್ ಕಾಲೇಜ್, ಕೆ.ಎಲ್.ಇ.ಎಸ್. ಡಾ. ಪ್ರಭಾಕರ್ ಕೋರೆ ಚಾರಿಟೇಬಲ್ ಆಸ್ಪತ್ರೆ, ಬೆಲಗವಿಯಲ್ಲಿ ಜನವರಿ 2020 ರಿಂದ ಡಿಸೆಂಬರ್ 2020 ರವರೆಗೆ ಡಾ. ಡಾ. ವಿ.ಎ.ಕೋತಿವಾಲೆ ಅವರ ಮಾರ್ಗದರ್ಶನದಲ್ಲಿ ಮೆಡಿಸಿನ್ ವಿಭಾಗದಲ್ಲಿ ಸ್ನಾತಕೋತ್ತರ ವಿದ್ಯಾರ್ಥಿ.

ವಿಧಾನ:
ಸಂಶೋಧನಾ ಅಧ್ಯಯನದ ಭಾಗವಾಗಲು ನೀವು ಒಪ್ಪಿದರೆ, ನಿಮಗೆ ಸಂಬಂಧಿತ ಇತಿಹಾಸವನ್ನು ಕೇಳಲಾಗುತ್ತದೆ ಮತ್ತು ಸಂಬಂಧಿತ ಕ್ಲಿನಿಕಲ್ ಪರೀಕ್ಷೆ ಮತ್ತು ತನಿಖೆಗೆ ಒಳಪಡಿಸಲಾಗುತ್ತದೆ. ಅಗತ್ಯ ತನಿಖೆಗಾಗಿ ನೀವು ರಕ್ತದ ಮಾದರಿಗಳನ್ನು ಸಹ ನೀಡಬೇಕಾಗುತ್ತದೆ.

ಅಪಾಯ ಮತ್ತು ಪ್ರಯೋಜನಗಳು:
ತನಿಖೆಗಾಗಿ ನಿಮ್ಮ ತೋಳಿನಿಂದ ರಕ್ತವನ್ನು ತೆಗೆದುಕೊಳ್ಳುವಾಗ ನೀವು ಪಡೆಯುವ ಏಕೈಕ ಅಪಾಯ ಮತ್ತು ಸಂಭವನೀಯ ಅಸ್ವಸ್ಥತೆ. ಇದು ರಕ್ತವನ್ನು ಎಳೆಯುವ ಸ್ಥಳದಲ್ಲಿ ಬೆವರುವಿಕೆ, ನೋವು, ಕೆಂಪು (ವಿರಳವಾಗಿ ಸಂಭವಿಸುತ್ತದೆ) ಗೆ ಕಾರಣವಾಗಬಹುದು.
ಈ ತನಿಖೆಯಿಂದ ನಿಮಗೆ ಯಾವುದೇ ಪ್ರಯೋಜನವಾಗದಿರಬಹುದು ಆದರೆ ಭವಿಷ್ಯದಲ್ಲಿ ಇತರರಿಗೆ ಉಪಯುಕ್ತವಾಗಲಿರುವ ಈ ಅಧ್ಯಯನದ ಭಾಗವಾಗುತ್ತೀರಿ.

ಪರ್ಯಾಯಗಳು:
ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸುವುದು ಸ್ವಯಂಪ್ರೇರಿತವಾಗಿದೆ. ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸದಿರಲು ನೀವು ಆಯ್ಕೆ ಮಾಡಬಹುದು. ನೀವು ಭಾಗವಹಿಸಲು ನಿರ್ಧರಿಸಿದರೆ ನೀವು ನಂತರ ನಿಮ್ಮ ಮನಸ್ಸನ್ನು ಬದಲಾಯಿಸಬಹುದು ಮತ್ತು ಅಧ್ಯಯನದಿಂದ ಹಿಂದೆ ಸರಿಯಬಹುದು. ನಿಮ್ಮ ನಿರ್ಧಾರವು ಪ್ರಸ್ತುತ ಅಥವಾ ಭವಿಷ್ಯದ ಆರೋಗ್ಯ ರಕ್ಷಣೆ ಅಥವಾ ನೀವು ಸ್ವೀಕರಿಸುವ ಇತರ ಸೇವೆಗಳನ್ನು ಬದಲಾಯಿಸುವುದಿಲ್ಲ. ಅಧ್ಯಯನ ವೈದ್ಯರು ಅಥವಾ ಪ್ರಾಯೋಜಕರು ಈ ಅಧ್ಯಯನದಲ್ಲಿ ನಿಮ್ಮ ಭಾಗವಹಿಸುವಿಕೆಯನ್ನು ಯಾವುದೇ ಸಮಯದಲ್ಲಿ ನಿಲ್ಲಿಸಬಹುದು. ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸದಿರಲು ನೀವು ಆರಿಸಿದರೆ, ನಿಮ್ಮ ಸ್ಥಿತಿಯ ರೋಗಿಗಳಿಗೆ ನೀವು ಪ್ರಮಾಣಿತ ಚಿಕಿತ್ಸೆಯನ್ನು ಸ್ವೀಕರಿಸುತ್ತೀರಿ.

ಗೌಪ್ಯತೆ ಮತ್ತು ಗೌಪ್ಯತೆ:
ಈ ಅಧ್ಯಯನದ ಸಮಯದಲ್ಲಿ ನಿಮ್ಮ ಬಗ್ಗೆ ಸಂಗ್ರಹಿಸಲಾದ ಎಲ್ಲಾ ಮಾಹಿತಿಯನ್ನು ಕಾನೂನಿನಿಂದ ಅನುಮತಿಸುವ ಮಟ್ಟಿಗೆ ಗೌಪ್ಯವಾಗಿಡಲಾಗುತ್ತದೆ. ಈ ಸಂಶೋಧನಾ ದಾಖಲೆಯಲ್ಲಿ ಕೋಡ್ ಸಂಖ್ಯೆಗಳು ನಿಮ್ಮನ್ನು ಗುರುತಿಸುತ್ತವೆ. ಈ ಅಧ್ಯಯನದ ಮಾಹಿತಿಯನ್ನು ಪ್ರಕಟಿಸಬಹುದು ಆದರೆ ಯಾವುದೇ ಪ್ರಕಟಣೆಯಲ್ಲಿ ನಿಮ್ಮ ಗುರುತು ಗೌಪ್ಯವಾಗಿರುತ್ತದೆ.

ಸಂಸ್ಥೆ / ಪ್ರಾಯೋಜಕರ ನೀತಿ: ಈ ಸಂಶೋಧನೆಗೆ ಅನ್ವಯಿಸುವುದಿಲ್ಲ
ಭಾಗವಹಿಸುವಿಕೆಗೆ ಆರ್ಥಿಕ ಪ್ರೋತ್ಸಾಹ:
ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ನಿಮಗೆ ಯಾವುದೇ ಉಡುಗೊರೆಗಳನ್ನು / ಪ್ರೋತ್ಸಾಹಕಗಳನ್ನು ನೀಡಲಾಗುವುದಿಲ್ಲ / ನೀಡಲಾಗುವುದಿಲ್ಲ.
ಫಲಿತಾಂಶಗಳನ್ನು ಪ್ರಕಟಿಸಲು ಅಧಿಕಾರ:
ಅಧ್ಯಯನದ ಫಲಿತಾಂಶಗಳನ್ನು ಎಂಡಿ ಪದವಿ, ವಿಮರ್ಶೆ ಮತ್ತು ಪ್ರಕಟಣೆ ಪೂರ್ಣಗೊಳಿಸುವ ಅಗತ್ಯತೆಯ ಭಾಗವಾಗಿ ಬೆಳಗಾವಿಯ ಕೆಎಲ್ಇ ವಿಶ್ವವಿದ್ಯಾಲಯಕ್ಕೆ ರವಾನಿಸಲಾಗುತ್ತದೆ.

ಅಧ್ಯಯನದ ಸಮಯದಲ್ಲಿ ಅಥವಾ ಭವಿಷ್ಯದಲ್ಲಿ ನೀವು ಈ ಕೆಳಗಿನ ವ್ಯಕ್ತಿಗಳನ್ನು ಸಂಪರ್ಕಿಸಬಹುದು,

ನೈತಿಕ ಸಮಿತಿಯ ಮುಖ್ಯಸ್ಥ
ಮಾನವ ಸಂಶೋಧನೆ
ಜೆಎನ್ಎಂಸಿ, ಬೆಳಗಾವಿ.

ಪ್ರೊಫೆಸರ್ ಮತ್ತು ಮುಖ್ಯಸ್ಥ
ಜನರಲ್ ಮೆಡಿಸಿನ್ ಇಲಾಖೆ,
ಜೆಎನ್ಎಂಸಿ,ಬೆಳಗಾವಿ.

ಸ್ನಾತಕೊತ್ತರ ವಿದ್ಯಾರ್ಥಿ,
ಜನರಲ್ ಮೆಡಿಸಿನ್ ಇಲಾಖೆ,
ಜೆಎನ್ಎಂಸಿ, ಬೆಳಗಾವಿ.

ಒಪ್ಪಿಗೆ ಪತ್ರ

ಕೆಳಗೆ ಸಹಿ ಮಾಡುವ ಮೂಲಕ ಈ ಅಧ್ಯಯನದಲ್ಲಿ ಭಾಗವಹಿಸಲು ನಾನು ಸ್ವಯಂಪ್ರೇರಣೆಯಿಂದ ಒಪ್ಪುತ್ತೇನೆ. ನಾನು ಯಾವುದೇ ಸಮಯದಲ್ಲಿ ಹಿಂತೆಗೆದುಕೊಳ್ಳಬಹುದು. ಈ ಫಾರ್ಮ್ಗೆ ಸಹಿ ಮಾಡುವ ಮೂಲಕ ನಾನು ನನ್ನ ಯಾವುದೇ ಕಾನೂನು ಹಕ್ಕುಗಳನ್ನು ಬಿಟ್ಟುಕೊಡುತ್ತಿಲ್ಲ. ಕೆಳಗಿನ ನನ್ನ ಸಹಿ ನಾನು ಈ ಒಪ್ಪಿಗೆಯ ಫಾರ್ಮ್ ಅನ್ನು ಓದಿದ್ದೇನೆ ಅಥವಾ ಈ ಸಮ್ಮತಿಯ ಫಾರ್ಮ್ ಅನ್ನು ನನಗೆ ಓದಿದ್ದೇನೆ ಮತ್ತು ಎಲ್ಲಾ ಪ್ರಶ್ನೆಗಳಿಗೆ ಉತ್ತರಿಸಿದೆ ಎಂದು ಸೂಚಿಸುತ್ತದೆ

ಭಾಗವಹಿಸುವವರ ಅಥವಾ ಕಾನೂನುಬದ್ಧವಾಗಿ ಅಧಿಕೃತ ಪ್ರತಿನಿಧಿಯ ಸಹಿ / ಎಡ ಹೆಬ್ಬೆರಳು ಮುದ್ರಣ

ಭಾಗವಹಿಸುವವರ ಹೆಸರು: …… ...

ಸಹಿ / ಎಡ ಹೆಬ್ಬೆರಳು ಅನಿಸಿಕೆ: …… ...
ಭಾಗವಹಿಸುವವರ

ತನಿಖಾಧಿಕಾರಿಯ ಹೆಸರು ಮತ್ತು ಸಹಿ: …… ...

ದಿನಾಂಕ:

ಸ್ಥಳ:

माहितीपूर्ण संमती

"वैद्यकीय आयसीयू मधील बॅक्टेरियातील प्रोफाइल आणि प्रतिजैविक संवेदनशीलतेचा नमुना क्लिनिकल भ्यास"

प्रधान न्वेषक: -
पदव्युत्तर विद्यार्थी,
सामान्य औषध विभाग,
जेएनएमसी, बेळगावी.

मार्गदर्शन:-
उपाध्यक्ष व युनिचे प्रमुख
सामान्य औषध विभाग,
जेएनएमसी, बेळगावी.

परिचय आणि उद्देश: -
आयसीयूमध्ये ँीबायोटिक प्रतिरोधक क्षमता ही जागतिक पातळीवरील एक मोठी समस्या आहे. हे लक्षात आले आहे की आयसीयूमध्ये औषध प्रतिरोधक जीवांचा प्रसार ँीबायोटिक्सच्या व्यापक वापराशी संबंधित आहे. आयसीयूमध्ये प्रतिकार करण्याचे प्रमाण सामान्य रुग्णालयाच्या से पेक्षा कित्येक प जास्त आहे.

बॅक्टेरियातील प्रोफाइल आणि प्रतिजैविक प्रतिरोधनाची माहिती जाणून घेण्यास विशेष महत्त्व आहे कारण वेगवेगळ्या ँीमाइक्रोबायल्सच्या प्रतिकार करण्याच्या दरामध्ये जागोवर भौगोलिक भिन्न स्थान आहे.

ही माहिती एम्पेरिकल पथ्ये तयार करण्यात आणि ँीबायोटिक स्टु र्डशिप प्रोग्राम वलंब आणि ंमलात आणण्यास मदत करू शकते.

जे.एन. मेडिकल कॉलेज, डॉ. कोरुप्रोलू पूजयामिनी देवी यांनी जानेवारी २०२० ते डिसेंबर २०२० या कालावधीत बेलगावी येथे केलेल्या भ्यासात भाग घेण्यासाठी आपण पात्र ठरल्यामुळे तुम्हाला वरील भ्यासामध्ये स्वतःला नोंदणी करण्यास सांगितले जाईल. डॉ.व्ही.ए. कोठीवाले यांच्या मार्गदर्शनाखाली औषध विभागातील पदव्युत्तर विद्यार्थी.

प्रक्रिया
आपण संशोधन भ्यासाचा भाग होण्यास सहमत सल्यास, आपणास संबंधित इतिहास विचारला जाईल आणि संबंधित क्लिनिकल परीक्षा आणि तपासणीस पात्र केले जाईल. आवश्यक तपासणीसाठी आपल्याकडून रक्ताचे नमुने देखील घ्यावे लागतील.

जोखीम आणि फायदे:
तपासणीसाठी आपल्या बाहेरून रक्त घेत असताना आपल्याला फक्त धोका आणि संभाव्य सुविधाची समस्या उद्भवू शकते. ज्या स्थानातून रक्त ओढले आहे त्या जागेवर सूज, वेदना, लालसरपणा (क्वचितच घडते) होऊ शकते.

या तपासणीमुळे आपल्याला फायदा होणार नाही परंतु आपण या अभ्यासात भाग घेतला जे भविष्यात इतरांना उपयुक्त ठरेल.

विकल्प:
या अभ्यासामध्ये भाग घेणे ऐच्छिक आहे. आपण या अभ्यासामध्ये भाग न घेणे निवडू शकता आपण भाग घेण्याचा निर्णय घेतल्यास आपण नंतर आपले मत बदलू आणि अभ्यासापासून दूर जाऊ शकता आपल्या निर्णयामुळे आपल्याला प्राप्त झालेल्या वर्तमान किंवा भविष्यातील आरोग्य सेवा किंवा इतर सेवा बदलणार नाहीत. अभ्यास डॉक्टर किंवा प्रायोजक या अभ्यासात आपला सहभाग कधीही थांबवू शकतात. आपण अभ्यासामध्ये भाग न घेणे निवडल्यास, आपल्या अ अ सलेल्या रूग्णांसाठी तुम्हाला प्रमाणित उपचार मिळेल.

गोपनीयता आणि गोपनीयता
या अभ्यासाच्या दरम्यान आपल्याबद्दल संकलित केलेली सर्व माहिती काळजीपूर्वक परवानगी सलेल्या मर्यादेपर्यंत गोपनीय ठेवली जाईल. कोड नंबर आपल्याला या संशोधन रेकॉर्डमध्ये ओळखतील. या अभ्यासाची माहिती प्रकाशित केली जाऊ शकते परंतु आपली ओळख कोणत्याही प्रकारात गोपनीय सेल.

संस्था/ प्रायोजक यांचे धोरण:
या संशोधनास लागू होत नाही

सहभागासाठी आर्थिक प्रोत्साहन:
अभ्यासामध्ये भाग घेण्यासाठी आपल्याला कोणत्याही भेटवस्तू / प्रोत्साहन दिले जाणार नाहीत.

परिणाम प्रकाशित करण्यासाठी अधिकृतता
अभ्यासाचे निकाल एमडी पदवी, आढावा आणि प्रकाशन पूर्ण करण्याच्या आवश्यकतेनुसार केएलई विद्यापीठ, बेळगाव येथे पाठविले जातील.

□ भ्यास□य□वेळी किंव□भविष्य□ील प्रश्न□ंय□बद्□तीत आपण ख□ील व्यक्तींशी संपर्क स□ू शकत□

नैतिक समिती म□नव संशोधन
जे.एन.एम.सी, बेळग□ी.

प्र□ध्य□ापक आणि प्रमुख,
स□मन□य औषध विभ□ा,
जेएनएमसी, बेळग□ी.

पदव्युत्तर विद्य□र्थी,
स□मन□य औषध विभ□ा,
जेएनएमसी, बेळग□ी.

संमती फॉर्म

मी ख□ली स्व□ाक्षरी करून य□□ भ्यास□□ भ□ा घेण्य□स स्वेच्छेने सहमत आहे. मी केव्ह□ही म□ाघार घेऊ शकतो. य□फॉर्मवर सही करून मी म□झ□कोणत□ही क□ायदेशीर हक्क सोडत नाह□ी. ख□ली म□झ□ी स्व□ाक्षरी सूचित करते की मी ह□संमती फॉर्म व□ाचल□आहे, किंव□तो मल□व□ाचल□गेल□आहे, आणि सर्व प्रश्न□ंची उत्तरे दिली आहेत.

सहभ□ागी किंव□क□ायदेशीररित्य□□ धिकृत प्रतिनिधीची सही / ड□ा□□ंगठ□प्रिंट□

सहभ□ागीचे न□ाव: …… ...

स्व□ाक्षरी / ड□ा□□ंगठ□ठस□ …… ...
सहभ□ागीच□

□ न्वेषक□ंचे न□ाव आणि स्व□ाक्षरी: …… ...

त□ारीख:

ठिक□ाण:

ANNEXURE 3- PROFORMA

"**CLINICAL STUDY OF BACTERIAL PROFILE AND ANTIBIOTIC SENSITIVITY PATTERN OF ISOLATES IN MEDICAL ICU "**

PROFORMA

Patient name: IP number:

Age/Sex: DOA:

Religion: DOD:

Address:

Phone number: Duration of stay:

Occupation:

CHIEF COMPLAINTS:

DIAGNOSIS:

PAST HISTORY:

FAMILY HISTORY:

PERSONAL HISTORY:

EXAMINATION:

O/E:

Pulse rate: Blood pressure:

RR TEMP(oral):

PALLOR, ICTERUS ETC:

OTHER FEATURES:

S/E:

Respiratory:

CVS:

P/A:

CNS:

INVESTIGATIONS:	DATE:	INFERENCE:
Haemoglobin		
Total leucocyte count		
Differential leucocyte count Neutrophils Lymphocytes Eosinophils Monocytes Basophils		
Platelet count		
Erythrocyte sedimentation rate		
Packed cell volume		
C Reactive protein		
Total bilirubin Direct bilirubin Indirect bilirubin		
SGOT		
SGPT		
Alkaline phosphatase		
Serum albumin		
Serum globulin		
Urea		
Creatinine		
Serum procalcitonin		
Urine routine and microscopy		
Blood culture		
OTHER CULTURES IMAGING		

TREATMENT:

CONCLUSION:

ANNEXURE 4 – MASTER CHART

	MASTER CHART																			
Sno	NAME	AGE	SEX	IPNO/OPNO	PAST HISTORY	DIAGNOSIS	STATUS AT DISCHARGE	SR PCT	SR LACTATE	TYPE OF CULTURE	GROWTH IN THE CULTURE	Amikacin	Amoxyclav	Ampicillin	Cefepime	Cefotaxime	Cefoxitin	Ceftazidime	Cefuroxime	Clindamycin	Clarithromycin
1	MR NARAYAN RAMCHANDRA KILLEKAR	89	M	1011384	DM,HTN	Unknown Prim	IMPROVED	100	4	BLOOD	Staphylococcus epidermidis			R						R	R
2	MRS. SHAHEDA BABALAL MAKANDAR	62	F	1011385	DM,HTN	Cholangitis	IMPROVED	12	3.5	BLOOD	Coagulase-negative Staphylococcus species									R	R
3	MR PRAKASH MARUTI SHARBIDDARE	48	M	1011407	DM,HTN	Pyelonephritis	IMPROVED	7	10	URINE	Klebsiella pneumoniae	R		R	R		R		R		
4	MR SURENDRA KALLAPPA CHOUGALA	60	M	1011419	DM	Pyelonephritis	EXPIRED	10	10	URINE	Enterobacterspecies	S		R	S		S	S	S		
5	MR BASAVARAJ BHIMAPPA GUDI	35	M	1011521	NIL	Intestinal perfo	IMPROVED	10	7	BLOOD	Acinetobacter baumannii/haemolyticus	S			R	R		R			
6	MR KRISHNAPPA BHARMAPPA MUSALE	86	M	1011530	DM,HTN	Unknown Prim	EXPIRED	10	10	BLOOD	Escherichia coli	S		S	S		S	S	S		
7	MR KRISHNAPPA BHARMAPPA MUSALE	86	M	1011530	DM,HTN	Unknown Prim	EXPIRED	10	10	URINE	Klebsiella pneumoniae	S		S	S		S	S	S		
8	MR RAVINDRA SHIVAPPA JAVALI	52	M	1011535	DM,HTN	Unknown Prim	IMPROVED	10	10	BLOOD	Coagulase-negative Staphylococcus species			R						R	R
9	MR SADASHIV BASAYYA PUJARI	46	M	1011567	DM	Urethritis	IMPROVED	10	4	URINE	Enterococcusfaecalis			R							
10	MRS. VIMAL AJIT NANDRE	55	F	1013683	DM,HTN	Cystitis	IMPROVED	7	10	URINE	Escherichia coli	R		R	R	R	R	R	R		
11	MR BALASAHEB MALAGOUDA PATIL	67	M	1014034	DM	Cystitis	EXPIRED	10	10	URINE	Escherichia coli	S		R	R		S		R		
12	MR BALASAHEB MALAGOUDA PATIL	67	M	1014034	DM	Cystitis	EXPIRED	10	10	BLOOD	Coagulase-negative Staphylococcus species			S						R	S
13	MR MALLAPPA BHIMAPPA GOUDAR	64	M	1011899	DM,HTN	Unknown Prim	IMPROVED	12	7	BLOOD	Acinetobacter lwoffri	R			R	R		R			
14	MRS. LAXMIBAI KADAPPA DODDANAGANNAVAR	85	F	1012728	NIL	Urethritis	IMPROVED	100	7	URINE	Klebsiella oxytoca isolated	S	R	R				R	R		
15	MRS. LAXMIBAI KADAPPA DODDANAGANNAVAR	85	F	1012728	NIL	Urethritis	IMPROVED	100	7	BLOOD	Acinetobacter lwoffri	R			R	R		R			
16	MRS. LAXMIBAI KADAPPA DODDANAGANNAVAR	85	F	1012728	NIL	Urethritis	IMPROVED	100	7	URINE	Klebsiella pneumoniae	R		R	R		R		R		
17	MRS. SHOBHA SHIVAKUMAR KATTI	68	F	1018977	DM,HTN	Unknown Prim	IMPROVED	10	3.5	BLOOD	Staphylococcus epidermidis									R	R
18	MR BHIMU MAHADEV ONTI	41	M	1012115	HTN	Scrotal abscess	EXPIRED	7	10	PUS	Klebsiella pneumoniae	R		R	R	R	R	R	R		
19	MRS. SHAILASHREE VITTHAL BADIGER	40	F	1012295	NIL	Pyelonephritis	EXPIRED	15	10	URINE	Citrobacter freundii complex	R		R	R	R	R	R	R		
20	MISS AKSHATA KALLAPPA HOSAPETI	18	F	1012317	DM	Unknown Prim	IMPROVED	7	7	BLOOD	Staphylococcus epidermidis									S	S
21	MR GADIGEPPA NEELAPPA ALAGODI	70	M	1012405	DM	Cystitis	UN-CHANGED	10	10	URINE	Klebsiella pneumoniae	R		R	R	R	R	R	R		
22	MR GADIGEPPA NEELAPPA ALAGODI	70	M	1012405	DM	Cystitis	UN-CHANGED	10	10	BLOOD	Staphylococcus epidermidis			R						S	S
23	MR DURAGAPPA BHIMAPPA KAGALGOMB	51	M	1012446	NIL	Cystitis	UN-CHANGED	10	10	URINE	Pseudomonas aeruginosa	R			R			R			
24	MRS. PREMA SHIVAJI KITTUR	65	F	1012458	DM,HTN	Urethritis	IMPROVED	10	4	URINE	Klebsiella pneumoniae	R		R	R	R	R	R	R		
25	MR PRABHAKAR PARASHURAM KAMBLE	52	M	1012566	DM,HTN	Pyelonephritis	IMPROVED	7	10	URINE	Enterobacter cloacae	R		R	R	R	R	R	R		
26	MR ASHISH VILAS TORE	26	M	1012760	NIL	Cystitis	EXPIRED	10	3.5	URINE	Enterococcusfaecalis			R							
27	MR NARASIMHA TIMMANNA GAONKAR	57	M	1012942	DM,HTN	Cholangitis	IMPROVED	7	10	BLOOD	Pseudomonas species	R			R	R		R			
28	MR BHARMU BABU AMBI	48	M	1013182	DM	Pyelonephritis	IMPROVED	12	7	URINE	Klebsiella oxytoca	R		R	R	R	R	R	R		
29	MR MARUTI RAMU KAMBLE	65	M	1013192	NIL	Endocarditis	EXPIRED	15	3.5	BLOOD	Coagulase-negative Staphylococcus species			S						S	S
30	MR MAHABALESHWAR NAGAPPA KURABAGATTI	68	M	1014972	HTN	Pyelonephritis	UN-CHANGED	10	10	URINE	Escherichia coli	S		R	R		S		R		
31	MR MAHABALESHWAR NAGAPPA KURABAGATTI	68	M	1014972	HTN	Pyelonephritis	UN-CHANGED	10	10	BLOOD	Escherichia coli	S		R	R		S		R		
32	MR GIRISH TARANATH MATTIKOP	48	M	5395069	HTN	Pyelonephritis	IMPROVED	100	7	URINE	Pseudomonas aeruginosa	R			R			R			
33	MRS. VIMAL AJIT NANDRE	55	F	1013683	DM,HTN	Cystitis	IMPROVED	7	10	URINE	Escherichia coli	R		R	R	R	R	R	R		
34	MRS. SUMITRA TAMMANAGOUDA PATIL	61	F	1013689	HTN	Cystitis	IMPROVED	10	4	URINE	Proteus mirabilis	S		R	R	R	S		R		
35	MRS. REKHA PRASHANT PATIL	22	F	1014233	HTN	Unknown Prim	UN-CHANGED	7	10	BLOOD	Enterobacter species	R		R	R	R	R	R	R		
36	MRS. REKHA PRASHANT PATIL	22	F	1014233	HTN	Unknown Prim	UN-CHANGED	7	10	URINE	Escherichia coli isolated	S	R	R				R	R		
37	MRS. REKHA PRASHANT PATIL	22	F	1014233	HTN	Unknown Prim	UN-CHANGED	7	10	BLOOD	Escherichia coli	S		R	R		S		R		
38	MR PRABHAKAR MAHALINGAPPA KHOT	73	M	1013966	NIL	Pyelonephritis	EXPIRED	12	10	URINE	Klebsiella pneumoniae	R		R	R	R	R	R	R		
39	MR ASHOK ABASAHEB INAMDAR	69	M	1014162	DM	Vaginitis	IMPROVED	10	10	URINE	Escherichia coli	S		R	R	R	R	R	R		
40	MRS. POORNIMA RACHAYYA HIREMATH	31	F	1015730	HTN	Hepatic absces	IMPROVED	7	10	BLOOD	Staphylococcus haemolyticus			R						S	R
41	MISS RENUKA BHARMANI BHATKHANDE	20	F	1016122	DM	Cystitis	UN-CHANGED	7	10	URINE	Enterococcus faecium			R							
42	MISS RENUKA BHARMANI BHATKHANDE	20	F	1016122	DM	Cystitis	UN-CHANGED	7	10	BLOOD	Staphylococcus epidermidis			S						R	R
43	MRS. MALABAI SHIVAJI MAGADUM	50	F	1016250	NIL	Cystitis	IMPROVED	10	7	URINE	Enterobacter cloacae	R		R	R	R	R	R	R		
44	MRS. TANGEVVA BALWANT PAKHARE	88	F	1017665	DM,HTN	Unknown Prim	IMPROVED	50	10	BLOOD	Escherichia coli	S		S	S		S	S	S		
45	MRS. TANGEVVA BALWANT PAKHARE	88	F	1017665	DM,HTN	Unknown Prim	IMPROVED	50	10	URINE	Escherichia coli	S		S	S		S	S	S		
46	MR GANGAPPA HUVVANNA PUJARI	60	M	1018062	HTN	Diabetic ulcers	EXPIRED	7	10	BLOOD	Coagulase-negative Staphylococcus species			R						R	R
47	MR PRASHANT TUKARAM BARDE	57	M	1018074	DM,HTN	Cystitis	IMPROVED	50	7	URINE	Escherichia coli	S		R	S		R	S	S		
48	MISS ANUSHREE PRAKASH MADIWALAR	16	F	1018437	NIL	Cystitis	IMPROVED	15	7	URINE	Proteus mirabilis	S		S	S		S	S	S		
49	MR LAXMAN SABAPPA KASE	82	M	1018662	NIL	Urethritis	EXPIRED	12	10	URINE	Acinetobacter baumannii/haemolyticus	S			R	R		R			
50	MR PRAKASH TIPPNA SUNAGAR	68	M	1018666	DM	Pyelonephritis	UN-CHANGED	7	10	URINE	Enterobacter cloacae	R		R	R	R	R	R	R		
51	MRS. RAZIYA BEGUM ABDUR RASHID JAMADAR	66	F	1018733	HTN	Cystitis	IMPROVED	10	10	BLOOD	Enterococcusfaecalis			R							
52	MRS. NIRMALA APPURAO RUDRAPUR	65	F	1019326	HTN	Cystitis	IMPROVED	100	10	URINE	Coagulase-negative Staphylococcus species			R						R	R
53	MRS. PARVATEVVA SHIVALINGAPPA JAKATI	87	F	1019376	HTN	Prostatitis	IMPROVED	7	10	URINE	Enterobacter aerogenes	R		R	R	R	R	R	R		
54	MR SHRINIVAS ANANT KULKARNI	59	M	1019396	NIL	Unknown Prim	IMPROVED	10	10	BLOOD	Escherichia coli	S		R	R		S		R		
55	MR SHRINIVAS ANANT KULKARNI	59	M	1019396	NIL	Unknown Prim	IMPROVED	10	10	URINE	Escherichia coli	R		R	R	R	R	R	R		
56	MRS. MONIKA ABILASH DESAI	20	F	1019615	HTN	Pyelonephritis	IMPROVED	12	10	BLOOD	Coagulase-negative Staphylococcus species			R						R	R
57	MR BASAPPA SADEPPA HADAPAD	56	M	1019619	NIL	Pyelonephritis	IMPROVED	12	10	URINE	Enterococcusfaecalis			R							
58	MR BASAPPA SADEPPA HADAPAD	56	M	1019619	NIL	Pyelonephritis	IMPROVED	12	10	BLOOD	Methicillin Resistant Staphylococcus aureus			R						R	R
59	MRS. LAXMI SHIVALING TUBACHI	25	F	1019632	DM,HTN	Pyelonephritis	EXPIRED	10	10	URINE	Enterococcus faecium			R							
60	MRS. LAXMI SHIVALING TUBACHI	25	F	1019632	DM,HTN	Pyelonephritis	EXPIRED	10	10	BLOOD	Coagulase-negative staphylococcus species			R						S	S
61	MRS. VIMAL SHIVAJI TUPARE	60	F	1019717	DM	Pyelonephritis	IMPROVED	10	3.5	URINE	Escherichia coli	S		R	R		R		R		
62	MR DUNDAPPA NARAYANAPPA PATTAR	56	M	1019831	HTN	Pyelonephritis	IMPROVED	15	4	URINE	Enterococcusfaecalis			R							
63	MR HUSSAINJI ISMAIL CHOUDHARI	61	M	1020060	DM	Vaginitis	IMPROVED	50	10	URINE	Enterobacter cloacae	R		R	R	R	R	R	R		
64	MRS. NAGAVVA ALAGOOD HOSAPETI	52	F	1020175	HTN	Cystitis	IMPROVED	10	7	URINE	Escherichia coli	S		R	R	R	R	R	R		
65	MRS. SUSHMITA MANJUNATH KAMBLE	24	F	1020176	NIL	Cystitis	IMPROVED	12	10	URINE	Enterobacter cloacae	R		R	R	R	R	R	R		
66	MR BASAVANT MALLAPPA KOCHARAGI	60	M	1020241	DM,HTN	Unknown Prim	IMPROVED	10	10	BLOOD	Coagulase-negative Staphylococcus species			R						S	R
67	MR PANDURANG MAHADEV GAWADE	55	M	1020451	DM	Unknown Prim	EXPIRED	15	10	BLOOD	Staphylococcus epidermidis			R						S	S
68	MR LAXMAN VAIJU MANNURKAR	54	M	1020454	HTN	Cystitis	IMPROVED	10	3.5	URINE	Enterobacter cloacae	S		R	S	R	R	R	R		
69	MRS. RATNAVVA FAKIRAPPA HAMMINAVAR	61	F	1020546	DM,HTN	Unknown Prim	IMPROVED	10	10	BLOOD	Pseudomonas aeruginosa	S			R			R			
70	MRS. MEENA SURESH BANSE	70	F	1020709	DM	Cystitis	EXPIRED	10	7	URINE	Escherichia coli	S		R	R		S		R		
71	MR SURESH MAHADEV BUWA	45	M	1020641	DM	Bronchiectasis	IMPROVED	7	7	BLOOD	Coagulase-negative Staphylococcus species									S	S
72	MRS. MANGAL APPASO DESAI	51	F	1021417	NIL	Pyelonephritis	IMPROVED	12	10	URINE	Acinetobacter baumannii/haemolyticus	R			R	R		R			
73	MR SHANKAR SIDRAM KHAVATI	50	M	1021536	NIL	Pneumonia	IMPROVED	10	10	BLOOD	Coagulase-negative Staphylococcus species			R						S	S
74	MRS. SHANTA DANAPPA SHRESTHI @ GUTTIGOLI	58	F	1022243	DM	Urethritis	UN-CHANGED	10	7	BLOOD	Staphylococcus aureus									S	R
75	MRS. CHAMPAVVA GANGAPPA NAIK	40	F	1022242	NIL	Unknown Prim	UN-CHANGED	15	7	BLOOD	Enterococcus faecalis			S							
76	MR KIRAN MALLAPPA MANTOOR	20	M	1022660	HTN	Unknown Prim	UN-CHANGED	7	4	BLOOD	Enterobacter cloacae	S		R	R		R		R		
77	MR CHANNAPPA HANAMANTHAPPA TURAMARI	51	M	1023266	NIL	Vaginitis	IMPROVED	7	10	URINE	Escherichia coli	S		R	R		S		R		
78	MR CHANNAPPA HANAMANTHAPPA TURAMARI	51	M	1023266	NIL	Vaginitis	IMPROVED	7	10	BLOOD	Coagulase-negative staphylococcus species			R						R	R
79	MR SANJAY FAKEERAPPA CHANNAMETRI	40	M	1023338	DM	Pyelonephritis	IMPROVED	12	4	BLOOD	Escherichia coli	S		R	R		S				
80	MR BASAPPA HOLEPPA PATIL	46	M	1023365	DM	Unknown Prim	EXPIRED	7	10	BLOOD	Acinetobacter baumannii/haemolyticus	S			S	S		S			
81	MR CHANDRAPPA DEMAPPA HAVANNAVAR	56	M	1023577	NIL	Cystitis	IMPROVED	15	7	URINE	Enterococcus faecalis			R							
82	MR ASHOK GANGAPPA DHUPADAL	55	M	1023800	NIL	Pneumonia	IMPROVED	12	7	BLOOD	Escherichia coli	S		R	R	R	R		R		

Colistin	Ciprofloxacin	Fosfomycin	Gentamicin	Imipenem	Linezolid	Levofloxacin	Moxifloxacin	Meropenem	Nitrofurantoin	Norfoxacin	Penicillin	P/T	T/S	Tetracycline	Tigecycline	Teicoplanin	vancomycin	
	R	R	R		S	R	R				R		R	S		S	S	
	S	R	S		S	S	S						S	R		S	S	
S	R	R	R	S		R		R	R	R		R	R	R	R			
R	S	R	S	S		S		S	R	S		S	S	S	S			
	R		R			S		S					R	R				
	S	S	S	S		S		S	S	S		S	S	R	S			
	S	S	S	S		S	S	S				S	S	S	S			
	R	S	R		R	R	R				R		R	S		S	S	
	R				S	R			S	S	R			R		S	S	
R	R	R	R	R		R		R	R	R		R	R	R	S			
S	R	S	R	S		R		S	S	R		S	R	S	S			
	S	S	S		S	S	S				S		R	S				
	R		R	R		R		R					R	R				
		S	R	R		R		R	R	R								
	R		R	R		S		R						R				
S	R	R	R	R		R		R	R	R		R	R	R	S			
	S	R	R		R	S	S						S	S		S	S	
	R	R	R	R		R	R	R				R	R	R	R			
R	R	R	R	R		R		R	R	R		R	R	R	R			
	S	S	S		S	S	S						R	R		S	S	
R	S	S	R	S		S		R	S	S				R				
	S	S	R		S	S	S				R		R	S		S	S	
R	R		R			R		S		R		R						
R	R	R	R	R		R		R	R	R		R	R	R	R			
R	R	R	R	R		R		R	R	R		R	R	R	R			
	R				S	R			S	R	R			R		S	S	
	R		R	S		R		R				R	R	R				
R	R	S	R	R		R		R	S	R		R	R	R	S			
	S	S	S		S	S	S				S		S	S		S	S	
R	R	S	R	S		R	R	S				S	S	S	S			
R	R	S	R	S		R	R	S				S	S	S	S			
S	R		R	R		R		R		R		R						
R	R	R	R	R		R		R	R	R		R	R	S				
R	S	S	S			S		S	R	S		S	S	R				
R	R	R	R	S		R	R	R				R	R	S	R			
		S	S	R				R	S									
S	R	S	S	S		R	R	S				R	R	S	S			
R	R	R	R	R		R		R	R	R		R	R	R	R			
R	R	S	S	R		R		S	S	R		S	R	S	S			
	R	S	R		S	R	R				R		R	S		S	S	
	R				S	R			S	R	R			R		S	S	
	S	R	R		S	S	S				S		S	S		S	S	
S	R	R	R	R		R		R	R	R		R	R	R	R			
S	S	S	S	S		S		S	S	S		S	S	S	S			
S	S	S	S	S		S	S	S				S	S	S	S			
	S	R	R		R	S	S				R		S	S		S	S	
S	R	S	R	S		R		S	R	S		S	S	R				
	R				S	R			S	R	R			R		S	S	
	R	S	R		S	R	R				R		R	S		S	S	
	R				S	R					R			S		S	S	
	S	S	S		S	S	S				R			S		S	S	
S	R	S	R	S		R		S	R	S		S	R	S	R			
	S	S	S		S	S								S		S	S	
S	R	S	R	S		R		S	R	S		S	S	R	S			
			S	S		S		S						S	S			
	R		R			S		S						R				
			S		S	R				S						S	S	
S	R		R	S		R		S	S	R				R	S			

83	MR ASHOK GANGAPPA DHUPADAL	55	M	1023800	NIL	Pneumonia	IMPROVED	12	7	URINE	Escherichia coli	S		S	S	S	S	S	S			
84	MR SHRIKANT SIDDAPPA TALWAR	56	M	1025689	HTN	Scrotal abscess	UN-CHANGED	12	7	BLOOD	Staphylococcus haemolyticus			R						R	R	
85	MR SHRIKANT SIDDAPPA TALWAR	56	M	1025689	HTN	Scrotal abscess	UN-CHANGED	12	7	URINE	Klebsiella pneumoniae	R		R	R	R	R	R	R			
86	MRS. MAHADEVI NINGANAGOUDA PATIL	59	F	1024106	HTN	Unknown Prim	EXPIRED	7	4	BLOOD	Staphylococcus haemolyticus			R						R	R	
87	MR KALLAPPA CHANNAPPA KAMATAGI	55	M	1024123	HTN	Cystitis	IMPROVED	7	10	URINE	Citrobacter freundii complex	R			R	R	R	R	R			
88	MRS. HALIMA INAYAT BEPARI	24	F	1024331	HTN	Pneumonia	UN-CHANGED	12	7	BLOOD				S						S		
89	MR BAPUGOUDA HANUMANTRAY PATIL	40	M	1024505	NIL	COPD	IMPROVED	10	10	BLOOD	Acinetobacter baumannii/haemolyticus	R			R	R		R				
90	MR PRAMOD SHANKAR PHAYADE	75	M	1024506	DM	Unknown Prim	IMPROVED	100	10	BLOOD	Streptococcus bovis	S								S		
91	MR RAMNIKLAL MULCHAND MEHTA	75	M	1024644	HTN	Pneumonia	IMPROVED	10	7	BLOOD	Escherichia coli	S		R	R	R	R		R			
92	MR SHIVAJI PANDURANG SAVANT	58	M	1024663	NIL	Cystitis	IMPROVED	10	10	URINE	Klebsiella pneumoniae	R		R	R	R	R	R	R			
93	MR RUDRAPPA VINAYAK NANDIHALLI	21	M	1024664	NIL	Cystitis	IMPROVED	7	10	URINE	Acinetobacter baumannii/haemolyticus	R			R	R		R				
94	MRS. NOORJAHAN ABDULHAMEED INDIKAR	57	F	1025183	DM,HTN	Urethritis	EXPIRED	12	10	URINE	Enterococcus faecium			R								
95	MR PRAVEEN MALLIKARJUN HATTIMANI	24	M	1025284	NIL	Unknown Prim	EXPIRED	7	10	BLOOD	Staphylococcus haemolyticus			S						R	S	
96	MR SANGAPPA NINGAPPA SHIVAPUJI	56	M	1025320	NIL	Lung abscess	IMPROVED	50	10	BLOOD	Escherichia coli	S		R	R	R	R		R			
97	MR MALLIKARJUN BASAVANNEPPA KAMBAR	74	M	1025522	DM,HTN	Endocarditis	EXPIRED	100	7	BLOOD	Staphylococcus haemolyticus			R						R	R	
98	MR MALLIKARJUN BASAVANNEPPA KAMBAR	74	M	1025522	DM,HTN	Endocarditis	EXPIRED	100	7	URINE	Escherichia coli	S		R	R	R						
99	MRS. KAVERI IRAYYA SHENDAGI (HIREMATH)	24	F	1026305	NIL	Pyelonephritis	IMPROVED	10	10	BLOOD	Coagulase-negative staphylococcus species									S	S	
100	MRS. ANASUYA RACHAGOND LALASANGI	40	F	1026312	HTN	Pyelonephritis	IMPROVED	100	7	URINE	Enterococcus faecium											
101	MR MALLESHI MAHALINGAPPA SHIMPI	61	M	1026324	NIL	Cystitis	IMPROVED	100	10	URINE	Pseudomonas aeruginosa	S			R			R				
102	MR MALLESHI MAHALINGAPPA SHIMPI	61	M	1026324	NIL	Cystitis	IMPROVED	100	10	BLOOD	Escherichia coli	S		R	R		S		R			
103	MR RAJARAM BABURAO JUVALI	74	M	1026428	HTN	Unknown Prim	IMPROVED	50	10	BLOOD	Coagulase-negative staphylococcus species									S	R	
104	MR SANJU SHIVAJI MISAL	37	M	1026448	HTN	Cystitis	IMPROVED	15	7	URINE	Enterococcus faecium			R								
105	MRS. DANAMMA SADASHIV SHIDAGONI	19	F	1026528	DM	Cystitis	IMPROVED	12	3.5	URINE	Enterococcus faecium			R								
106	MR SHREEPAL KALLAPPA SAVANTANAVAR	52	M	1026531	NIL	Cystitis	IMPROVED	10	7	BLOOD	Klebsiella pneumoniae	S		R	R	R		R				
107	MR BASAPPA YALLAPPA TOTAGI	75	M	582736	NIL	Pyelonephritis	IMPROVED	10	10	URINE	Escherichia coli	S		R	R		S		R			
108	MR SALIM IBRAHIM MULLA	41	M	1026738	DM	Pyelonephritis	IMPROVED	10	10	URINE	Citrobacter species	R		R	R			R	R			
109	MR ADIVEPPA YALLAPPA MUNAVALLI	79	M	1027107	NIL	Vaginitis	EXPIRED	50	4	URINE	Escherichia coli isolated	S		R	R			R				
110	MR MUDAKAPPA SHIVALINGAPPA BASHETTI	78	M	1026913	HTN	Cystitis	IMPROVED	7	10	URINE	Escherichia coli	R			R	R		R				
111	MRS. UMA SHANKAR GOTADE	55	F	1027005	DM,HTN	Unknown Prim	IMPROVED	7	7	BLOOD	Escherichia coli	S		R	R	R		R				
112	MRS. JAITUNBI NABISAB BEPARI	73	F	1027009	HTN	Pneumonia	IMPROVED	7	4	BLOOD	Staphylococcus epidermidis			R						R	R	
113	MISS TRIPTI NARAYAN BHOI	25	F	1027149	NIL	Pyelonephritis	EXPIRED	7	7	BLOOD	Acinetobacter baumannii/haemolyticus	S			S	S		S				
114	MR HANUMANT KRISHNAJI NANAWATY	67	M	1027150	NIL	Cystitis	EXPIRED	10	7	URINE	Citrobacter species	R		R	R	R	R	R	R			
115	MR RAJU CHANDRAKANT PATIL	47	M	1027345	DM,HTN	Lung abscess	IMPROVED	50	10	BLOOD	Staphylococcus haemolyticus			R						R	S	
116	MR ABDULSHABBIR HAJARAT SANADI	58	M	1027346	DM	Urethritis	EXPIRED	10	4	URINE	Enterobacterspecies			R	R	R		R				
117	MR BASALINGAPPA NAGAPPA WALAD	68	M	1027451	DM	Urethritis	EXPIRED	7	4	URINE	Proteus mirabilis	S		S	S		S	S	S			
118	MRS. THAISEEN RAGHAVENDRA -	21	F	1029549	NIL	Vaginitis	UN-CHANGED	15	3.5	URINE	Escherichia coli	R		R	R	R	R	R	R			
119	MRS. SHOBHA BHARMA SHINDE	65	F	1030177	HTN	Cystitis	UN-CHANGED	100	3.5	URINE	Escherichia coli	R		R	R	R	R	R	R			
120	MRS. VIJAYA CHANDRAKANT CHIKORDE	78	F	1027925	DM,HTN	Urethritis	IMPROVED	10	7	URINE	Escherichia coli	R		R	R	R	R	R	R			
121	MR POPAT BHIMU CHOUGULE	62	M	1028693	HTN	Necrotising fas	EXPIRED	15	10	BLOOD	Staphylococcus aureus									S	S	
122	MISS MEGHA RAMESH GONDHALI	20	F	1028958	DM,HTN	Cystitis	IMPROVED	15	10	URINE	Enterobacterspecies	R		R	R	R	R	R				
123	MRS. SUNANDA GANAPATI PADATARI	21	F	1029084	NIL	Unknown Prim	IMPROVED	12	4	BLOOD	Coagulase-negative staphylococcus species			R						S	S	
124	MR BASAVARAJ JETTEPPA HOSAMANI	63	M	1029359	DM	Cystitis	IMPROVED	7	10	URINE	Enterococcus faecium			R								
125	MRS. LAXMI ASHOK GIRIYALKAR	51	F	1029419	NIL	Cystitis	IMPROVED	15	10	URINE	Proteus vulgaris	R		R	R		R	R	R			
126	MRS. LAXMI ASHOK GIRIYALKAR	51	F	1029419	NIL	Cystitis	IMPROVED	15	10	BLOOD	Enterobacter aerogenes	R		R	R	R		R	R			
127	MR KENCHAPPA SANGANBASAPPA LANGOTI	67	M	1029523	NIL	Pyelonephritis	EXPIRED	50	7	URINE	Enterobacter species isolated	R		R	R	R	R	R	R			
128	MRS. SAROJANI ISHWAR NOGANIHAL	71	F	1030110	NIL	Unknown Prim	IMPROVED	7	3.5	BLOOD	Staphylococcus haemolyticus			R						R	S	
129	MISS SHANTA BALKRISHNA BORKAR	69	F	1030163	HTN	Prostatitis	IMPROVED	10	10	URINE	Escherichia coli	S		R	R	R	R	R	R			
130	MRS. SHOBHA BHARMA SHINDE	65	F	1030177	HTN	Cystitis	UN-CHANGED	100	3.5	URINE	Escherichia coli	R		R	R	R	R	R	R			
131	MR NARAYAN KALLAPPA GOVEKAR	83	M	1030935	NIL	Cystitis	IMPROVED	15	7	URINE	Citrobacter freundii complex	R		R	R	R	R	R	R			
132	MRS. GANGUBAI MARUTI MARIHALKAR	72	F	1031237	NIL	Bronchiectasis	IMPROVED	10	10	BLOOD	Escherichia coli	S		R	S	R	R	R	R			
133	MISS SHIVAMMA NIMBANNA NARALAR	18	F	1041620	NIL	Intestinal perfo	IMPROVED	10	10	BLOOD	Escherichia coli	R		R	R	R	R	R	R			
134	MR SIDDAPPA APPANNA KHANAPUR	65	M	1031445	DM,HTN	Unknown Prim	IMPROVED	7	7	BLOOD	Staphylococcus epidermidis			R						S	S	
135	MRS. KAMALA BAI TAMMANA SHRINGARI	64	F	:103188	HTN	Cystitis	IMPROVED	15	10	URINE	Enterobacter cloacae	R		R	R		R	R	R			
136	MR YUVARAJ GANGAPPA MADIGAR	30	M	1031982	DM	Cystitis	UN-CHANGED	10	10	URINE	Acinetobacter baumannii/haemolyticus	R			R	R		R				
137	MRS. GANGUBAI MARUTI BENKE	75	F	1032014	DM,HTN	Cystitis	UN-CHANGED	7	10	URINE	Escherichia coli	R		R	R	R	R	R	R			
138	MRS. SHANTA SADASHIV JADHAV	82	F	1032020	DM	Pyelonephritis	UN-CHANGED	50	4	URINE	Escherichia coli	R		R	R	R	R	R	R			
139	MRS. CHANDRABAI BHUJAPPA KUMATOLE	86	F	1032433	DM,HTN	Vaginitis	IMPROVED	10	10	BLOOD	Staphylococcus haemolyticus			R						R	R	
140	MRS. PRAGATI ANIL SUTAR	30	F	1032448	DM,HTN	Cystitis	IMPROVED	7	7	URINE	Enterobacter cloacae	R		R	R		R	R	R			
141	MR BABURAO BHIMAPPA KELGERI	75	M	1032748	DM,HTN	Cystitis	IMPROVED	7	7	URINE	Escherichia coli	R		R	R		R	R	R			
142	MR VISHNU SIDRAM JADHAV	82	M	1032976	HTN	Cystitis	IMPROVED	10	10	URINE	Proteus mirabilis	S		R	R	R	S		R			
143	MRS. SAROJINI VASANTH SIDDANNAVAR	70	F	1033310	NIL	Unknown Prim	IMPROVED	10	10	BLOOD	Acinetobacter lwoffi	S			S	S		R				
144	MR PARAPPA BASAPPA BELLAD	80	M	1033066	DM	Cystitis	IMPROVED	50	10	URINE	Enterobacter cloacae	R		R	R		R	R	R			
145	MRS. RIYANA GUDUSAB BADAWALE	50	F	1033413	DM,HTN	Intestinal perfo	EXPIRED	12	10	BLOOD	Coagulase-negative staphylococcus species	R		R						R	R	
146	MR SHIVALINGAPPA DURGAPPA -	45	M	1033607	DM,HTN	Pyelonephritis	EXPIRED	10	10	URINE	Klebsiella pneumoniae	R		R	R	R	R	R	R			
147	MR THANGRAJ KRISHNAN -	54	M	1034117	DM	Pyelonephritis	EXPIRED	100	10	URINE	Acinetobacter baumannii complex/haemolyticus	R			R	R		R				
148	MR THANGRAJ KRISHNAN -	54	M	1034117	DM	Pyelonephritis	EXPIRED	100	10	BLOOD	Staphylococcus epidermidis									R	S	
149	MRS. SIDDAVVA DUNDAPPA MELAVANKI	60	F	1034384	DM,HTN	Pyelonephritis	IMPROVED	10	7	URINE	Enterobacter cloacae	R		R	R	R	R	R	R			
150	MR NOORAHAMAD RAHMATKHAN PATHAN	83	M	1034570	DM	Unknown Prim	EXPIRED	10	4	BLOOD	Coagulase-negative Staphylococcus species			R						S	R	
151	MR GAJANAN KRISHNA PATIL	64	M	1037231	DM,HTN	Grade 4 bed so	UN-CHANGED	10	4	BLOOD	Acinetobacter baumannii complex/haemolyticus	R			R	R		R				
152	MR GAJANAN KRISHNA PATIL	64	M	1037231	DM,HTN	Grade 4 bed so	UN-CHANGED	10	4	BLOOD	Enterobacter species isolated	S		R	S	S	R	S	S			
153	MR SHIVANAND IRAPPA MURAGUDE	42	M	1034907	NIL	Cystitis	IMPROVED	100	10	URINE	Escherichia coli	R		R	R	R	R	R	R			
154	MR MARUTI SHANKAR JOGADANDAKAR	53	M	1404854	DM,HTN	Urethritis	IMPROVED	10	7	URINE	Proteus mirabilis	S		R	R	S	S		R			
155	MR MARUTI SHANKAR JOGADANDAKAR	53	M	1404854	DM,HTN	Urethritis	IMPROVED	10	7	BLOOD	Escherichia coli	R		R	R		R		R			
156	MR MARUTI SHANKAR JOGADANDAKAR	53	M	1404854	DM,HTN	Urethritis	IMPROVED	10	7	URINE	Escherichia coli	S		R	R		S		R			
157	MRS. SUMANGALA SHIVALINGAYYA VIRAKTAMATH	71	F	1035224	HTN	Pyelonephritis	IMPROVED	7	3.5	URINE	Acinetobacter lwoffii group	S			S	S		S				
158	MR SOMALING MAHADEV BIRADAR	25	M	1035225	HTN	Cystitis	IMPROVED	3	4	BLOOD	Escherichia coli	S		R	R		R		R			
159	MR ANNAPPA SHIVARAI CHOUGALA	97	M	1035356	NIL	Prostatitis	IMPROVED	7	7	URINE	Acinetobacter baumannii complex/haemolyticus	R			R	R		R				
160	MR SAKKARNAIK BASANGOUDA PATIL	88	M	1035357	HTN	Cystitis	IMPROVED	10	4	URINE	Escherichia coli	R		R	R	R	R	R	R			
161	MR IRANNA BASAVANEPPA MELMATTI	62	M	1035494	HTN	Pyelonephritis	IMPROVED	3	4	URINE	Escherichia coli	S		S	S	R	S	S	R			
162	MR ARJUN LAXMAN JADHAV	80	M	1036275	DM,HTN	Cholangitis	EXPIRED	7	10	BLOOD	Escherichia coli	S		R	R		R		R			
163	MRS. SIDDAVVA DUNDAPPA MELAVANKI	60	F	1034384	DM,HTN	Pyelonephritis	IMPROVED	10	7	BLOOD	Enterobacter cloacae	R		R	R	R	R	R	R			
164	MR RAJARAM KALAGOUDA PATIL	61	M	1036683	NIL	Vaginitis	IMPROVED	7	10	URINE	Enterobacter species	R		R	R	R	R	R	R			
165	MR RAJARAM KALAGOUDA PATIL	61	M	1036683	NIL	Vaginitis	IMPROVED	7	10	BLOOD	Acinetobacter baumannii complex/haemolyticus	R			R	R		R				
166	MRS. DURUGAMMA AMARAPPA ADIN	71	F	1037179	HTN	Unknown Prim	IMPROVED	3	10	BLOOD	Staphylococcus haemolyticus			R						S	R	

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	R	S	R		S	R	R				R			S		S	S	

167	MRS. GANGAWA SHIVGONDA HATTARKI	68	F	1037211	DM	Hepatic abscess	IMPROVED	10	4	BLOOD	Staphylococcus haemolyticus			R						R	R
168	MR GAJANAN KRISHNA PATIL	64	M	1037231	DM,HTN	Grade 4 bed so	UN-CHANGED	10	4	BLOOD	Acinetobacter baumannii complex/haemolyticus	R			R	R		R			
169	MR GAJANAN KRISHNA PATIL	64	M	1037231	DM,HTN	Grade 4 bed so	UN-CHANGED	10	4	BLOOD	Enterobacter species isolated	S		R	S	S	R	S	S		
170	MR GANGANNA SHIVANAND HARAKUNI	31	M	1037840	DM	Unknown Prima	EXPIRED	10	7	BLOOD	Coagulase-negative Staphylococcus species			R						S	S
171	MRS. PADMAVATI BABURAO TELANG	82	F	1038416	NIL	Pneumonia	IMPROVED	50	7	BLOOD	Coagulase-negative Staphylococcus species			R						S	R
172	MRS. PADMAVATI BABURAO TELANG	82	F	1038416	NIL	Pneumonia	IMPROVED	50	7	URINE	Enterobacter cloacae	R		R	R	R	R	R	R		
173	MR BASAYYA GURUPADAYYA HIREMATH	65	M	1038491	DM	Endocarditis	UN-CHANGED	10	10	BLOOD	Escherichia coli	S		R	R		S		R		
174	MR BASAYYA GURUPADAYYA HIREMATH	65	M	1038491	DM	Endocarditis	UN-CHANGED	10	10	URINE	Escherichia coli	S		R	R		S		R		
175	MR NAGENDRAPPA LALAPPA SAGAR	54	M	1038497	DM,HTN	Cystitis	IMPROVED	3	3.5	URINE	Enterobacter species	R		R	R	R	R	R	R		
176	MR VITHAL KHERU MOHITE	68	M	1038583	NIL	Cystitis	IMPROVED	10	7	URINE	Klebsiella pneumoniae	R		R	R	R	R	R	R		
177	MR UMESH VISHNAPPA CHOLACHAGUDDA	62	M	1038775	HTN	Pneumonia	IMPROVED	100	10	BLOOD	Escherichia coli	R		R	R		S		R		
178	MRS. NEELABAI NANA PATIL	64	F	1039045	DM	Cystitis	UN-CHANGED	7	7	URINE	Escherichia coli	S		R	R	R	R	R	R		
179	MR APPASAHEB BABU DABBANNAVAR	65	M	1040621	DM	Unknown Prima	EXPIRED	100	10	BLOOD	Coagulase-negative Staphylococcus species			R						S	R
180	MR APPASAHEB BABU DABBANNAVAR	65	M	1040621	DM	Unknown Prima	EXPIRED	100	10	URINE	Escherichia coli	S		R	R	R	R	R	R		
181	MR UMESH VISHNAPPA CHOLACHAGUDDA	62	M	1038775	HTN	Pneumonia	IMPROVED	100	10	URINE	Escherichia coli	R		R	R		S		R		
182	MRS. VIDYA RAJENDRA JADHAV	40	F	964539r	DM,HTN	Pyelonephritis	EXPIRED	15	10	URINE	Escherichia coli isolated		R	R	R			R			
183	MRS. SEJAL SANTOSH SHINDE	30	F	1039510	NIL	Urethritis	UN-CHANGED	7	10	URINE	Enterobacter species	R		R	R	R	R	R	R		
184	MRS. SAROJINI SHANKAR LIGADE	79	F	1039687	HTN	Cystitis	IMPROVED	7	10	BLOOD	Enterobacter cloacae	R		R	R	R	R	R	R		
185	MRS. SAROJINI SHANKAR LIGADE	79	F	1039687	HTN	Cystitis	IMPROVED	7	10	BLOOD	Enterobacter species isolated	S		S	S		S	S	S		
186	MRS. BASAMMA CHANDRASHEKAR PATIL	55	F	1040050	HTN	Pyelonephritis	IMPROVED	50	7	URINE	Enterococcus species isolated			R							
187	MR BASAVARAJ BABU MARED	28	M	1039975	DM	Pneumonia	IMPROVED	10	4	BLOOD	Staphylococcus epidermidis									S	R
188	MR APPASAHEB BABU DABBANNAVAR	65	M	1040621	DM	Unknown Prima	EXPIRED	100	10	BLOOD	Coagulase-negative Staphylococcus species			R						S	R
189	MRS. ANASUYA CHANABASAPPA DODDAGOUDAR	38	F	1040642	HTN	Pyelonephritis	EXPIRED	7	10	URINE	Escherichia coli	R		R	R	R	R	R	R		
190	MRS. RASHMI PRAKASH GAHLOT	59	F	1040977	HTN	Chronic bronch	EXPIRED	3	4	BLOOD	Acinetobacter baumannii complex/haemolyticus	R			R	R		R			
191	MR SHANKAR KRISHNAPPA TALEKAR	45	M	1040685	NIL	Unknown Prima	IMPROVED	10	10	BLOOD	Acinetobacter baumannii	S			R	S		S			
192	MRS. SHOBHA ADAPPA MAGADUM	54	F	1040894	DM	Cystitis	EXPIRED	3	4	URINE	Acinetobacter baumannii complex/haemolyticus	R			R	R		R			
193	MRS. SHOBHA ADAPPA MAGADUM	54	F	1040894	DM	Cystitis	EXPIRED	3	4	BLOOD	Methicillin Resistant Staphylococcus aureus			R						S	S
194	MR BASAVARAJ ERAPPA UNAKAL	37	M	1041244	DM,HTN	Cholangitis	IMPROVED	10	10	BLOOD	Klebsiella pneumoniae	S		R	S	S	R	S	S		
195	MR ANILKUMAR SHANKARRAO KORISHETTY	56	M	1041457	NIL	Unknown Prima	IMPROVED	10	7	BLOOD	Staphylococcus haemolyticus			R						R	R
196	MRS. JULEKHA VATIMAHAMED PATHAN	65	F	1041558	DM	Cystitis	IMPROVED	10	10	URINE	Escherichia coli	R		R	R		R		R		
197	MRS. JULEKHA VATIMAHAMED PATHAN	65	F	1041558	DM	Cystitis	IMPROVED	10	10	URINE	Escherichia coli	R		R	R		R		R		
198	MRS. SHANTA SATYAPPA CHAVAN	54	F	1042516	HTN	Bronchiectasis	EXPIRED	10	10	BLOOD	Methicillin Resistant Staphylococcus aureus			R						R	S
199	MR MOHD HAYAT MAHAMAD USMAN MAKANDAR	58	M	6013558	HTN	Unknown Prima	IMPROVED	7	10	BLOOD	Escherichia coli	S		R	R		S		R		
200	MR MOHD HAYAT MAHAMAD USMAN MAKANDAR	58	M	6013558	HTN	Unknown Prima	IMPROVED	7	10	URINE	Klebsiella pneumoniae	R		R	R	R	R	R	R		
201	MR MOHD HAYAT MAHAMAD USMAN MAKANDAR	58	M	6013558	HTN	Unknown Prima	IMPROVED	7	10	URINE	Escherichia coli	S		R	R		S		R		
202	MRS. JYOTHI JAGADISH SIDDANNAVAR	38	F	1042841	NIL	Cystitis	IMPROVED	7	7	URINE	Escherichia coli	S		R	R	R	R	R	R		
203	MRS. SUNANDA SADASHIV ANGOLKAR	78	F	1042843	HTN	Cystitis	IMPROVED	50	7	URINE	Escherichia coli	S		S	S	S	S	S	S		
204	MR PUNDALIK GAWADU PATIL	35	M	1043189	DM	Diabetic ulcers	UN-CHANGED	50	10	BLOOD	Coagulase-negative Staphylococcus species			R						R	R
205	MRS. KASHAVVA SHIVAMOGEPPA MUGALKHOD	98	F	1043386	DM	Urethritis	UN-CHANGED	7	3.5	URINE	Acinetobacter baumannii complex/haemolyticus	R			R	R		R			
206	MRS. YALLAMMA YALLAPPA MADIWALAR	73	F	1043639	NIL	Urethritis	UN-CHANGED	10	10	URINE	Escherichia coli	R		R	R	R	R	R	R		
207	MR PRAVIN SHIVAPUTRA BHOJANNAVAR	45	M	1043829	NIL	Urethritis	IMPROVED	15	3.5	URINE	Enterobacter aerogenes	S		S	S	S	R	S	S		
208	MR SHIVAPPA SIDDAPPA CHABBI	76	M	1044293	DM,HTN	Intestinal perfo	IMPROVED	15	10	BLOOD	Escherichia coli	S		R	R		S		R		
209	MRS. PRIYANKA SADASHIV AWARADI	24	F	1044412	HTN	Pneumonia	IMPROVED	10	4	BLOOD	Enterobacter aerogenes	R		R	R	R	R	R	R		
210	MRS. RAMAVVA ARJUN KATTI	40	F	1045217	NIL	Cystitis	IMPROVED	15	4	URINE	Escherichia coli	R		R	R		R		R		
211	MRS. RAMAVVA ARJUN KATTI	40	F	1045217	NIL	Cystitis	IMPROVED	15	4	BLOOD	Methicillin Resistant Staphylococcus aureus			R						S	S
212	MRS. MALU PRAKASH KOPARDE	54	F	1045223	NIL	Cystitis	IMPROVED	10	10	URINE	Acinetobacter baumannii complex/haemolyticus	R			R	R		R			
213	MRS. SUSHEELA NAGAPPA HAMMANNAVAR	65	F	1052893O	DM,HTN	Pyelonephritis	IMPROVED	3	10	Urine	Klebsiella pneumoniae	R		R	R	R	R	R			
214	MRS. SUSHEELA NAGAPPA HAMMANNAVAR	65	F	1052893O	DM,HTN	Pyelonephritis	IMPROVED	3	10	Blood	Acinetobacter baumannii/haemolyticus	R			R	R		R			
215	MR SOMAPPA YALLAPPA HULAKUND	33	M	1054228	NIL	Unknown Prima	EXPIRED	7	10	Blood	Acinetobacter lwoffi	S			S	S		S			
216	MRS. RUPALI RAJARAM DOIPHODE	33	F	1052992	DM	Unknown Prima	IMPROVED	7	10	Blood	Staphylococcus haemolyticus			R						R	R
217	MRS. SHANTABAI SIDRAMAPPAGOUDA PATIL	76	F	1054618	NIL	Cystitis	IMPROVED	15	10	Blood	Escherichia coli	S		R	R	R	S		R		
218	MRS. JUBEDA BI MAHMADALI MIRAJKAR	65	F	1054020	NIL	Pyelonephritis	UN-CHANGED	7	10	Urine	Escherichia coli	R		R	R	R	R	R	R		
219	MR RAVINDRA RAGHAVENDRA DESHPANDE	47	M	1054117	DM	Necrotising fas	EXPIRED	50	4	Blood	Enterococcus faecium			R							
220	MRS. UMA GURUDEV HIREMATH	67	F	1054165	DM,HTN	Diabetic ulcers	EXPIRED	7	10	Blood	Klebsiella pneumoniae	R		R	R	R	R	R	R		
221	MRS. UMA GURUDEV HIREMATH	67	F	1054165	DM,HTN	Diabetic ulcers	EXPIRED	7	10	Urine	Klebsiella pneumoniae	R		R	R	R	R	R	R		
222	MRS. UMA GURUDEV HIREMATH	67	F	1054165	DM,HTN	Diabetic ulcers	EXPIRED	7	10	Blood	Staphylococcus haemolyticus	R								R	S
223	MRS. SABIHA BEGUM ABRARHUSAIN SAYYAD	53	F	1055042	HTN	Endocarditis	EXPIRED	10	3.5	Blood	Coagulase-negative staphylococcus species			R						R	R
224	MRS. NAMRATA AJINKYA DAMLE	31	F	1054508	DM	Cystitis	IMPROVED	3	10	Urine	Escherichia coli	S		R	R	R	R	R	R		
225	MRS. REKHA ASHOK KUMAR PATIL	65	F	1052078	DM	Cystitis	IMPROVED	15	4	Urine	Klebsiella pneumoniae	R		R	R	R	R	R	R		
226	MRS. SUVARNA BHIMAPPA GOTUR	48	F	1055755	DM,HTN	Cystitis	IMPROVED	10	10	Urine	Escherichia coli	R		R	R	R	R	R	R		
227	MR ANIL VITTAL BAMAGONDA	52	M	1055409	DM	Lung abscess	EXPIRED	15	7	Blood	Staphylococcus epidermidis			R						R	R
228	MR ANIL VITTAL BAMAGONDA	52	M	1055409	DM	Lung abscess	EXPIRED	15	7	Pus	Klebsiella pneumoniae	R			R	R	R	R	R		
229	MR KADAPPA ALLAPPA KHANAPURE	85	M	1056326	DM	Cholangitis	IMPROVED	7	10	Blood	Escherichia coli	S		R	R		S		R		
230	MR RATANAKAR NEELAPPA GAMANGATTI	59	M	1056460	DM,HTN	Bronchiectasis	IMPROVED	15	7	Blood	Staphylococcus haemolyticus			R						R	R
231	MRS. SUGANDHA GANGADHAR AJAREKAR	63	F	1059784	DM,HTN	Pyelonephritis	IMPROVED	10	10	Urine	Escherichia coli	R		R	R	R	R	R	R		
232	MRS. MANI BALA RAMANUJ PRASAD SINHA	75	F	: 105695	DM,HTN	Cystitis	EXPIRED	7	4	Urine	Escherichia coli	S			R	R	S		R		
233	MRS. SUMAN SUBHASH KADOLKAR	62	F	1057240	DM	Diabetic ulcers	IMPROVED	100	10	Blood	Coagulase-negative staphylococcus species									R	R
234	MR MAHALING RACHAPPA CHINCHAKHANDI	52	M	1057383	HTN	Chronic bronch	EXPIRED	7	10	Blood	Enterococcus species										
235	MRS. AYESHA HUSSAIN MAHALDAR	65	F	1057647	HTN	Vaginitis	IMPROVED	15	7	Blood	Staphylococcus haemolyticus			R						R	R
236	MR LAXMAN IRAPPA ANKADAVAR	71	M	1055989	DM	Pneumonia	IMPROVED	10	10	Sputum	Klebsiella pneumoniae	R		R	R	R	R	R			
237	MRS. AYESHA HUSSAIN MAHALDAR	65	F	1057647	HTN	Vaginitis	IMPROVED	15	7	Urine	Proteus mirabilis	R		R	R	R	R	R	R		
238	MRS. SUMITRA INDRAJIT PURANIK	64	F	1055222	NIL	Endocarditis	EXPIRED	15	4	Blood	Escherichia coli	R		R	R	R	R	R	R		
239	MRS. SUMITRA INDRAJIT PURANIK	64	F	1055222	NIL	Endocarditis	EXPIRED	15	4	Pus	Escherichia coli	S		R	R	R	R	S	S		
240	MR APOLIN THOMAS FERNANDES	80	M	1057876	DM	Pneumonia	UN-CHANGED	15	4	Blood	Coagulase-negative staphylococcus species									S	S
241	MR APOLIN THOMAS FERNANDES	80	M	1057876	DM	Pneumonia	UN-CHANGED	15	4	Urine	Escherichia coli	R		R	R	R	R	R	R		
242	MRS. SIDDAVVA PUNDLIK WAGUKAR	56	F	1057954	NIL	Unknown Prima	IMPROVED	10	7	Blood	Staphylococcus haemolyticus			R						R	R
243	MRS. SIDDAVVA PUNDLIK WAGUKAR	56	F	1057954	NIL	Unknown Prima	IMPROVED	10	7	Urine	Klebsiella pneumoniae	R		R	R	R	R	R	R		
244	MR GURUJI DURGAPPA KURUBGOLLAR	46	M	1059515	DM,HTN	Cystitis	IMPROVED	10	4	Urine	Escherichia coli	R		R	R	R	R	R	R		
245	MRS. DEVAMMA BASANNA AGRAHAR	59	F	1058430	DM	Unknown Prima	EXPIRED	3	7	Blood	Coagulase-negative staphylococcus species			S						S	S
246	MRS. DEVAMMA BASANNA AGRAHAR	59	F	1058430	DM	Unknown Prima	EXPIRED	3	7	Pus	Klebsiella pneumoniae	R		R	R	R	R	R	R		
247	MRS. DEVAMMA BASANNA AGRAHAR	59	F	1058430	DM	Unknown Prima	EXPIRED	3	7	Urine	Klebsiella pneumoniae	R		R	R	R	R	R	R		
248	MR BAKUL NINGAPPA NAYIK	35	M	1058591	NIL	Unknown Prima	IMPROVED	10	7	Blood	Staphylococcus haemolyticus			S						S	S
249	MR SUHAS MAHADEV MALI	71	M	1058842	DM,HTN	Cystitis	IMPROVED	50	7	Blood	Staphylococcus haemolyticus			R						R	R
250	MR IRANNA SHANKREPPA BETAGERI	43	M	1058870	HTN	Pyelonephritis	IMPROVED	10	10	Urine	Escherichia coli	R		R	S	R	R	R	R		

	R	S	R		S	R	R				R			R		S	S	
	R		R	R		R		R						R				
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	S	S	S		S	S	S				R			S		S	S	
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	S		S		S	R	R	R				R		R			S	
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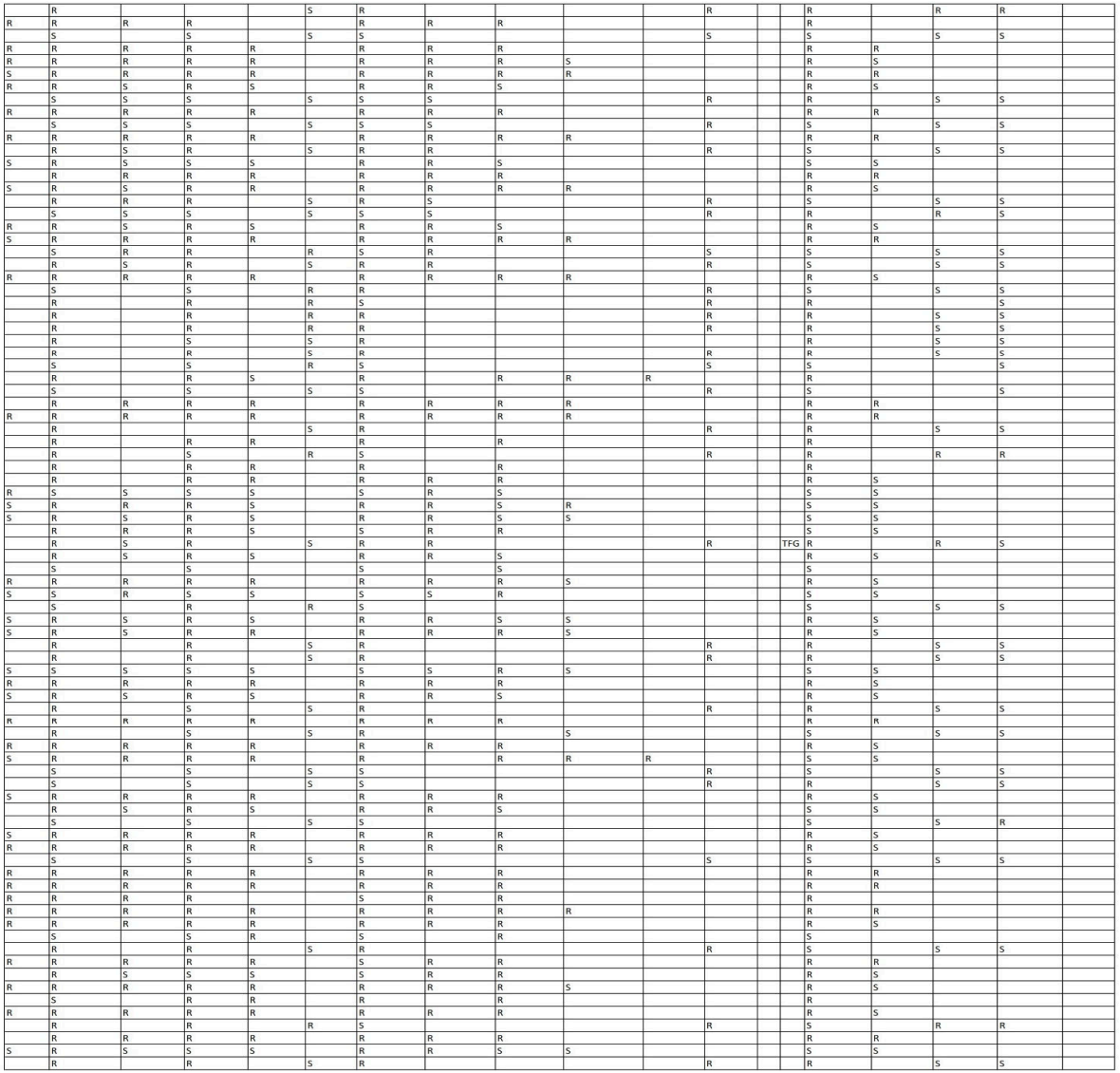
	R	S	S		S	R	R				S			S		S	S	
	R	S	R		S	R	R				R			S		R	S	
S	R	S	S	S		R	R	S	S					R	S			

251	MR LAXMIKANTH HANAMAPPA NAGANATH	86	M	1059032	DM,HTN	Unknown Prim	IMPROVED	7	10	Blood	Enterococcus faecalis			R							
252	MR LAXMIKANTH HANAMAPPA NAGANATH	86	M	1059032	DM,HTN	Unknown Prim	IMPROVED	7	10	Pus	Proteus mirabilis	R		R	R	R	R	R	R		
253	MR TEJAS BHARAT GAWADE	34	M	1061985	DM,HTN	Pneumonia	IMPROVED	7	4	Blood	Staphylococcus haemolyticus									S	
254	MR KHAMRUDDIN ALLAHBAKSH SANGOLLI	56	M	1059106	HTN	Pharyngitis	IMPROVED	15	4	Sputum	Klebsiella pneumoniae	R		R	R	R	R	R	R		
255	MR GURUJI DURGAPPA KURUBGOLLAR	46	M	1059515	DM,HTN	Cystitis	IMPROVED	10	4	Urine	Escherichia coli	R		R	R	R	R	R	R		
256	MR BALAPPA DURGAPPA TASHILDAR	70	M	1059503	NIL	Pyelonephritis	IMPROVED	10	10	Urine	Enterobacter aerogenes	R		R	R	R	R	R	R		
257	MR BALAPPA DURGAPPA TASHILDAR	70	M	1059503	NIL	Pyelonephritis	IMPROVED	10	10	Blood	Escherichia coli	S		R	R		R		R		
258	MRS. VIDYA KRISHNANAND REVANKAR	66	###	1059583	NIL	Bronchiectasis	UN-CHANGED	10	7	Blood	Staphylococcus haemolyticus			R						R	R
259	MRS. BIBI AYESHA TOUFIK SHAIKH	23	F	1059740	DM,HTN	COPD	IMPROVED	10	10	ET	Klebsiella pneumoniae	R		R	R	R	R	R	R		
260	MR BALACHANDRA APPASAB GUNDALE	80	M	1059999	DM,HTN	Diabetic ulcers	IMPROVED	25	10	Blood	Coagulase-negative Staphylococcus species			R						S	S
261	MR MALLIKARJUN PATREPPA HUGAR	66	M	1059858	DM	Urethritis	IMPROVED	15	7	Urine	Escherichia coli	R		R	R	R	R	R	R		
262	MRS. AMEENABANU KHAMRUDDIN SHAIKH	70	F	1060181	HTN	Lung abscess	EXPIRED	7	10	Blood	Coagulase-negative Staphylococcus species			R						R	R
263	MR LAXMANGOUDA ALLAPPAGOUDA PATIL	62	M	1060573	NIL	Urethritis	IMPROVED	50	10	Blood	Escherichia coli	R		R	R	R	R	R	R		
264	MR LAXMANGOUDA ALLAPPAGOUDA PATIL	62	M	1060573	NIL	Urethritis	IMPROVED	50	10	Pus	Klebsiella pneumoniae	R		R	R	R	R	R	R		
265	MR LAXMANGOUDA ALLAPPAGOUDA PATIL	62	M	1060573	NIL	Urethritis	IMPROVED	50	10	Urine	Klebsiella oxytoca	R		R	R	R	R	R	R		
266	MR PARASAGOUDA SIDAGOUDA PATIL	63	M	1060074	NIL	Unknown Prim	IMPROVED	7	10	Blood	Coagulase-negative Staphylococcus species			R						R	R
267	MRS. VIJAYA MANIK BIJJARAGI	56	F	1061204	HTN	Pyelonephritis	IMPROVED	7	10	Blood	Staphylococcus haemolyticus			R						R	R
268	MR BALAPPA DURGAPPA TASHILDAR	70	M	1059503	NIL	Pyelonephritis	IMPROVED	10	10	Blood	Escherichia coli	S		R	R		R		R		
269	MR BALAPPA DURGAPPA TASHILDAR	70	M	1059503	NIL	Pyelonephritis	IMPROVED	10	10	ET	Enterobacter aerogenes	R		R	R	R	R	R	R		
270	MISS ANAGHA ANANT BADARAYANI	22	F	1060725	DM	Unknown Prim	IMPROVED	100	7	Blood	Coagulase-negative Staphylococcus species			S						R	R
271	MR DURGAPPA S/O AMARAPPA .	75	M	1061072	DM	Unknown Prim	IMPROVED	50	10	Blood	Staphylococcus haemolyticus			R						R	R
272	MR ARAVIND VASUDEV BEKANALKAR	74	M	1061231	DM,HTN	Cystitis	EXPIRED	50	4	Urine	Klebsiella pneumoniae	R		R	R	R	R	R	R		
273	MR JAVID GOUS INAMDAR	45	M	1061276	NIL	Pneumonia	IMPROVED	10	7	Blood	Staphylococcus haemolyticus			R						R	
274	MR PUNDALIK NARAYAN GOJAGEKAR	42	M	1061324	NIL	Unknown Prim	EXPIRED	7	7	Blood	Methicillin resistant staphylococcus aureus			R							R
275	MR MARUTI PARASHRAM PATIL	47	M	1061429	HTN	COPD	IMPROVED	50	10	Blood	Staphylococcus haemolyticus			R						R	
276	MRS. SHASHIKALA MALLIKARJUN HOSMATH	44	F	1061418	HTN	Unknown Prim	IMPROVED	25	10	Blood	Staphylococcus haemolyticus			R						R	
277	MR CHINNAYYA NAGAYYA CHIKKAMATH	39	M	1061436	HTN	Unknown Prim	UN-CHANGED	10	10	Blood	Coagulase-negative Staphylococcus species									R	
278	MR SHIVANAND BALLAPPA HATTARAKI	50	M	1061498	NIL	Hepatic abscess	UN-CHANGED	10	4	Blood	Staphylococcus haemolyticus			R						R	
279	MR LEELAAVTI BASAYYA MATHAD	63	M	1061790	DM	Intestinal perfo	IMPROVED	7	10	Blood	Staphylococcus aureus									S	S
280	MR DHIRENDRA NARASINHARAO DAMBAL	62	M	1061882	HTN	Cystitis	IMPROVED	25	10	Urine	Escherichia coli	S		R	R	R	S		R		
281	MR SWAMI YOGANAND . .	76	M	1061907	NIL	Cystitis	IMPROVED	7	7	Blood	Coagulase-negative staphylococcus species			R						S	
282	MRS. MANGALA GURUSHANTAYYA HIREMATH	55	F	: 106145	NIL	Urethritis	EXPIRED	7	10	Urine	Enterobacter species	R		R	R	R	R	R	R		
283	MR VIJAY GIRIMALLAPPA HASABI	40	M	1062279	DM	Vaginitis	IMPROVED	50	10	Urine	Klebsiella pneumoniae	R		R	R	R	R	R	R		
284	MRS. SUMAN DASHARATH PATIL	78	F	1062317	HTN	Diabetic ulcers	IMPROVED	50	7	Blood	Enterococcus faecium			R							
285	MRS. SUMAN DASHARATH PATIL	78	F	1062317	HTN	Diabetic ulcers	IMPROVED	50	7	Sputum	Acinetobacter baumannii/haemolyticus	R			R	R		R			
286	MRS. MAHADEVI VEERAPPA HALAKI	62	F	1062454	DM	Bronchiectasis	EXPIRED	10	7	Blood	Staphylococcus haemolyticus			R						R	
287	MR VILAS SRIDHAR JOSHI	76	M	1062442	HTN	Unknown Prim	EXPIRED	100	10	Blood	Acinetobacter baumannii complex/haemolyticus	R			R	R		R			
288	MRS. SITAVVA MALLAPPA MALLUR	64	F	1065350	DM	Submandibular	IMPROVED	7	3.5	Pus	Klebsiella pneumoniae	R		R	R	R	R	R	R		
289	MR NEELAKANTH CHANNAPPA ANGADI	72	M	1062662	DM	Community acc	EXPIRED	7	7	ET	Escherichia coli	S		R	R		S		R		
290	MR B.HEMAGIRIYAPPA GUNDAPPA BARIKER	68	M	1062835	DM	Cystitis	IMPROVED	25	7	Urine	Klebsiella pneumoniae	R		R	R		R		R		
291	MRS. SHARADA SIDDAPPA GUGGARI	73	F	1063256	DM	Pyelonephritis	EXPIRED	10	10	Urine	Escherichia coli	S		R	S	R	R	R	R		
292	MRS. RANGAWWA YALLAPPA CHIPALKATTI	40	F	: 106334	HTN	Diabetic ulcers	IMPROVED	10	10	Pus	Enterobacter species	S		S	S	S	S	R	S		
293	MRS. VEENA VITHAL HUGGI	60	F	1020612	NIL	Chronic bronch	IMPROVED	10	7	Blood	Staphylococcus haemolyticus			R						R	S
294	MR ARJUNA SHARNAPPA BENAL	50	M	1063684	NIL	Unknown Prim	IMPROVED	10	7	Blood	Escherichia coli	S		R	R	R	R	R	R		
295	MRS. CHANDA SUBRAO GODSE	73	F	1076091	NIL	Lung abscess	EXPIRED	10	10	Blood	Acinetobacter baumannii complex/haemolyticus	S			S	S		S			
296	MRS. CHANDA SUBRAO GODSE	73	F	1076091	NIL	Lung abscess	EXPIRED	10	10	Urine	Escherichia coli	R		R	R	R	R	R	R		
297	MRS. RENUKA BHIMAPPA SAVASUDDI	29	F	1064137	NIL	Intestinal perfo	IMPROVED	10	10	Blood	Escherichia coli	S		R	R		S		R		
298	MR SHANKARRAO MAHADEV KORISHETTY	86	M	1064275	NIL	Unknown Prim	EXPIRED	25	10	Blood	Coagulase-negative Staphylococcus species									S	
299	MR SHANKARRAO MAHADEV KORISHETTY	86	M	1064275	NIL	Unknown Prim	EXPIRED	25	10	Urine	Escherichia coli	S		R	R	R	R	R	R		
300	MR UDAY GOPAL GONDKAR	50	M	1064244	NIL	Urethritis	IMPROVED	50	4	Urine	Escherichia coli	R		R	R	R	R	R	R		
301	MR GANGAPPA MADIVALAPPA MURAGOD	60	M	1064278	DM	Pneumonia	IMPROVED	10	10	Blood	Staphylococcus haemolyticus			R						R	
302	MRS. SHANTA GANAPATI KHOT	65	F	1064368	DM,HTN	COPD	IMPROVED	15	4	Blood	Staphylococcus haemolyticus			R						R	
303	MR VISHNU GANGARAM MANDLIK	57	M	1064454	DM,HTN	Cystitis	IMPROVED	100	10	Urine	Escherichia coli	S		R	R		S		R		
304	MR SHRIKANT ISHWARAPPA NOOLI	79	M	6183455	DM	Diabetic ulcers	IMPROVED	10	3.5	Pus	Klebsiella pneumoniae	R		R	R	R	R	R	R		
305	MR KALLAPPA PARSHURAM PATIL	82	M	1065076	HTN	Hepatic abscess	UN-CHANGED	10	4	Blood	Escherichia coli	S		R	R		S		R		
306	MR MARUTI SATTEPPA GASTI	43	M	1065242	DM	Bronchiectasis	EXPIRED	10	3.5	Blood	Staphylococcus haemolyticus			R						R	
307	MR KAPIL PARASHRAM PATIL	32	M	1065397	DM,HTN	Pharyngitis	IMPROVED	7	4	Sputum	Klebsiella pneumoniae	R		R	R	R	R	R	R		
308	MR KAPIL PARASHRAM PATIL	32	M	1065397	DM,HTN	Pharyngitis	IMPROVED	7	4	Urine	Staphylococcus haemolyticus									R	
309	MR ARJUNA SHARANAPPA BENAL	50	M	1065998	HTN	Intestinal perfo	IMPROVED	50	10	Blood	Escherichia coli	R		R	R	R	R	R	R		
310	MR ARJUNA SHARANAPPA BENAL	50	M	1065998	HTN	Intestinal perfo	IMPROVED	50	10	Urine	Klebsiella pneumoniae	R		R	R	R	R	R	R		
311	MR RAJSHEKHAR SHIVAPPA REVADIGAR	51	M	1065747	DM	Grade 4 bed so	IMPROVED	25	10	Blood	Coagulase-negative Staphylococcus species			R						S	
312	MR SHANKAR BHIMAJI KINJAWADEKAR	83	M	1066541	DM,HTN	Lung abscess	UN-CHANGED	10	10	Blood	Staphylococcus haemolyticus			R						R	
313	MR NIRUPADAYYA BALAYYA MATHAPATI	31	M	1066699	NIL	Cystitis	IMPROVED	100	10	Blood	Klebsiella pneumoniae	R		R	R	R	R	R	R		
314	MR ALLAPPA APPANNA RATNAPPAGOL	68	M	1066786	DM	Unknown Prim	IMPROVED	10	10	Blood	Escherichia coli	R		R	S	S	R	S	R		
315	MRS. LAXMI PARASHARAM MUTGEKAR	19	F	1066928	HTN	Pneumonia	EXPIRED	10	10	Blood	Coagulase-negative Staphylococcus species									R	
316	MR MUTTAPPA VASAPPA KAMBALE	65	M	1065981	DM	COPD	UN-CHANGED	10	7	ET	Klebsiella pneumoniae	R		R	R	R	R	R	R		
317	MRS. LALITA APPAJI LANGARAKHANDE	55	F	1067019	DM,HTN	Ventilator asso	IMPROVED	7	10	ET	Enterobacter cloacae	R		R	R	R	R	R	R		
318	MRS. LALITA APPAJI LANGARAKHANDE	55	F	1067019	DM,HTN	Ventilator asso	IMPROVED	7	10	Blood	Coagulase-negative Staphylococcus species									S	
319	MR DUNDAPPA BASSAPPA HEBBALI	85	M	1065374	NIL	Lung abscess	IMPROVED	10	10	Sputum	Klebsiella pneumoniae	R		R	R	R	R	R	R		
320	MR PURUSHOTHAMA H.A ANNEGOWDA -	47	M	1067069	DM	Hepatic abscess	IMPROVED	10	10	Blood	Enterobacter cloacae	R		R	R	R	R	R	R		
321	MR PURUSHOTHAMA H.A ANNEGOWDA -	47	M	1067069	DM	Hepatic abscess	IMPROVED	10	10	ET	Proteus mirabilis	R		R	R	R	R	R	R		
322	MR PURUSHOTHAMA H.A ANNEGOWDA -	47	M	1067069	DM	Hepatic abscess	IMPROVED	10	10	Urine	Klebsiella pneumoniae	R		R	R	R	R	R	R		
323	MR RAMCHANDRA SHANKRAPPA CHAVANNAVAR	75	M	1067085	DM,HTN	Necrotising fas	IMPROVED	7	10	Pus	Escherichia coli	R		R	R	R	R	R	R		
324	MR AKSHAY PRALHAD GAYAKWAD	23	M	1067140	NIL	COPD	IMPROVED	50	10	Blood	Pseudomonas species	S			R	R		R			
325	MR BHIMANAGOUDA DEEMANAGOUDA PATIL	63	M	: 106715	DM	Unknown Prim	EXPIRED	10	7	Blood	Coagulase-negative Staphylococcus species			R						R	
326	MRS. SUNANDA GOUDAPPA KONDIKOPPA	52	F	1066942	NIL	Community acc	IMPROVED	25	3.5	ET	Escherichia coli	R		R	R		R		R		
327	MRS. SUNANDA GOUDAPPA KONDIKOPPA	52	F	1066942	NIL	Community acc	IMPROVED	25	3.5	ET	Escherichia coli	R		R	R		S		R		
328	MISS DIKSHITA SHIVANAND MALIMATH	20	F	1067320	DM,HTN	Cystitis	IMPROVED	10	10	Urine	Escherichia coli	R		R	R	R	R	R	R		
329	MRS. NOORJAHAN UMAR SHAIKH	72	F	1067395	HTN	Ventilator asso	IMPROVED	7	10	ET	Acinetobacter baumannii complex/haemolyticus	R			R	R		R			
330	MR MAHESH BASAPPA CHANDARAGI	25	M	1067480	NIL	Chronic bronch	UN-CHANGED	10	10	ET	Enterobacter species	R		R	R	R	R	R	R		
331	MAST HASHIR MOHAMMED ASHRAF ASHRAF	16	M	1067629	DM	Unknown Prim	IMPROVED	10	4	Blood	Coagulase-negative staphylococcus species			R						R	
332	MR YAKUBALI VAZIRALI PATEL	71	M	1067523	NIL	Pneumonia	IMPROVED	15	7	Blood	Klebsiella pneumoniae	R		R	R	R	R	R	R		
333	MR BASAPPA KENCHAPPA BISIROTTI	64	M	1067914	DM	Pyelonephritis	UN-CHANGED	10	10	Urine	Escherichia coli	S		R	R	R	R	R	R		
334	MRS. CHETANKUMAR RAMESH KASHAPPAGOL	18	F	1067897	DM	Necrotising fas	EXPIRED	10	7	Blood	Staphylococcus haemolyticus			R						R	



335	MR BHAWAR SINGH KISHAN SINGH RAJPUT	39	M	1068010	HTN	Scrotal abscess	UN-CHANGED	25	10	Pus	Pseudomonas aeruginosa	R			R			R				
336	MR MADIVALAPPA GURUPADAPPA KALAKAMB	59	M	1068049	DM,HTN	Ventilator asso	IMPROVED	10	10	ET	Klebsiella pneumoniae	R		R	R	R	R	R	R			
337	MR SHIVAGOND RUDRAPPA SOLAPUR	72	M	1068056	HTN	Chronic bronch	EXPIRED	10	3.5	ET	Klebsiella pneumoniae	R		R	R	R	R	R	R			
338	MR SHIVAGOND RUDRAPPA SOLAPUR	72	M	1068056	HTN	Chronic bronch	EXPIRED	10	3.5	Urine	Escherichia coli	R		R	R	R	R	R	R			
339	MRS. SHANTA BALAPPA MALAGE	60	F	1068154	NIL	Cystitis	IMPROVED	7	10	Urine	Klebsiella pneumoniae	R		R	R	R	R	R	R			
340	MRS. SAROJA KAREPPA HARUGERI	51	F	1068169	NIL	Urethritis	IMPROVED	10	4	Urine	Escherichia coli	S		R	R	R	R	R	R			
341	MRS. PRAMILA GAJANANRAO PATIL	70	F	1068265	NIL	Bronchiectasis	IMPROVED	10	7	Blood	Acinetobacter baumannii	S			R	R		R				
342	MR SHRIKANT MUTTAPPA NILAJAGI	62	M	1068297	DM	COPD	EXPIRED	7	10	Blood	Escherichia coli	R		R	R	R	R	R	R			
343	MR SHRIKANT MUTTAPPA NILAJAGI	62	M	1068297	DM	COPD	EXPIRED	7	10	Urine	Escherichia coli	S		R	R		R		R			
344	MRS. HEMA RAJU HARIJAN	21	F	1068328	DM	Ventilator asso	UN-CHANGED	7	3.5	ET	Acinetobacter baumannii complex/haemolyticus	R			R	R		R				
345	MRS. HEMA RAJU HARIJAN	21	F	1068328	DM	Ventilator asso	UN-CHANGED	7	3.5	Urine	Escherichia coli	R		R	R	R	R	R	R			
346	MRS. BAGAWWA UDAPPA MANNIKERI	62	F	1068424	NIL	Unknown Prim	IMPROVED	10	10	Blood	Klebsiella pneumoniae	S		R	R	R	R	R				
347	MRS. BAGAWWA UDAPPA MANNIKERI	62	F	1068424	NIL	Unknown Prim	IMPROVED	10	10	Urine	Klebsiella pneumoniae	S		R	R		S		R			
348	MR RAHAMATULLA DILAWARSAB ATTAR	45	M	1068200	DM,HTN	Unknown Prim	IMPROVED	7	10	Blood	Staphylococcus haemolyticus			R						R		
349	MISS BHAGYASHREE SAHADEV KOLKAR	34	F	1068723	DM	Unknown Prim	IMPROVED	7	10	Blood	Coagulase-negative Staphylococcus species			R						S		
350	MRS. DANAVVA SHRISHAILAPPA JIRAGAL	62	F	1068950	NIL	Cystitis	IMPROVED	100	10	Urine	Enterobacter species	R		R	R	R	R	R	R			
351	MRS. NIRMALABAI SHRIKANT RATHI	59	F	1068435	NIL	Prostatitis	EXPIRED	7	4	Urine	Enterococcus species			R								
352	MRS. SANJANA SANJAY NAGANUR	42	F	1068676	DM,HTN	Diabetic ulcers	UN-CHANGED	25	3.5	Blood	Acinetobacter baumannii complex/haemolyticus	R			R	R		R				
353	MRS. MAHADEVI BASAPPA PULAGADDI	60	F	1069247	DM	Lung abscess	EXPIRED	15	10	Blood	Acinetobacter baumannii complex/haemolyticus	S			S	S		S				
354	MR BASAVARAJ NANDKUMAR HONGAL	38	M	1069298	DM	Submandibular	IMPROVED	10	7	Pus	Enterobacter cloacae	R		R	R	R	R	R	R			
355	MR MOULAALI MAHMAD GOUSE BALUR	40	M	1069315	DM,HTN	Unknown Prim	IMPROVED	15	3.5	Blood	Klebsiella pneumoniae	R		R	R	R	R	R	R			
356	MRS. VASANTI GOVIND GOJE	81	F	1069364	NIL	Chronic bronch	EXPIRED	25	7	Blood	Proteus mirabilis	S		S	S	S	S	S	S			
357	MR SHRIKANTH GURUPAD BHADRASHETTI	31	M	1069458	NIL	Cystitis	IMPROVED	7	4	Urine	Escherichia coli	R		R	R	R	R	R	R			
358	MR MAHANTESH CHANDRASHEKHARAYYA HIREMATH	50	M	1069501	NIL	COPD	UN-CHANGED	7	10	Blood	Acinetobacter baumannii complex/haemolyticus	S			S	S		S				
359	MR PARASHARAM BADAKU GURAV	61	M	1068994	NIL	Unknown Prim	EXPIRED	10	3.5	Blood	Coagulase-negative Staphylococcus species			R						R		
360	MR PARASHARAM BADAKU GURAV	61	M	1068994	NIL	Unknown Prim	EXPIRED	10	3.5	ET	Pseudomonas aeruginosa	S			R			R				
361	MR APPASAB SIDALINGA KHOT	89	M	1069604	NIL	Vaginitis	IMPROVED	7	3.5	Urine	Klebsiella pneumoniae	R		R	R	R	R	R	R			
362	MR SHIVARAYAPPA RUDRAPPA WALAD	65	M	1069761	HTN	Pneumonia	UN-CHANGED	10	3.5	Blood	Acinetobacter baumannii complex/haemolyticus	R			R	R		R				
363	MRS. PREETI PRAVEEN TUMMARAMATTI	27	F	1069933	HTN	Grade 4 bed so	IMPROVED	10	10	Blood	Enterobacter cloacae	R		R	R	R	R	R	R			
364	MR SHIVALINGESHWAR BASAVLING KASHTRI	62	M	1069982	NIL	Bronchiectasis	IMPROVED	100	4	Blood	Coagulase-negative Staphylococcus species			R						R		
365	MR SHIVALINGESHWAR BASAVLING KASHTRI	62	M	1069982	NIL	Bronchiectasis	IMPROVED	100	4	Urine	Escherichia coli	S		S	S	S	S	S	S			
366	MR MALLAPPA SANGAPPA HOSAMANI	57	M	1030306	NIL	Community acq	EXPIRED	15	10	ET	Klebsiella pneumoniae	R		S	R	S	R	R	R			
367	MR SHAILESH BALAKRISHNA KOLI	46	M	1004856	DM,HTN	Ventilator asso	UN-CHANGED	7	4	ET	Klebsiella pneumoniae	S		S	S		S	S	S			
368	MRS. VEENASHREE NAMDEV KESARKAR	22	F	994709	HTN	Ventilator asso	EXPIRED	10	10	ET	Klebsiella pneumoniae	R		R	R	R	R	R	R			
369	MR SANGAMESH HANAMANTAPPA SALAWADAGI	36	M	1042601	HTN	Community acq	IMPROVED	10	10	ET	Klebsiella pneumoniae	R		R	R	R	R	R	R			
370	MR JAGADEESH BASAPPA TIPPANNAVAR	50	M	992868	HTN	COPD	IMPROVED	7	10	ET	Klebsiella pneumoniae	S		R	R	R	R	R	R			
371	MR SANTOSH BALIRAM SUTAR	35	M	1026179	DM,HTN	Chronic bronch	EXPIRED	15	7	ET	Klebsiella pneumoniae	S		R	S	S	S	S	S			
372	MR BABASAHEB GOUSSAB JAMADAR	64	M	997505	HTN	Ventilator asso	IMPROVED	7	7	ET	Klebsiella pneumoniae	R		R	R	R	R	R	R			
373	MR PARSU MARUTI SATTIKAR	65	M	1057557	HTN	Community acq	UN-CHANGED	10	10	ET	Klebsiella pneumoniae	R		R	R	R	R	R	R			
374	MR ASHRAF ALI ABDUL GANI CHONCHE	60	M	1032727	NIL	COPD	EXPIRED	10	7	ET	Klebsiella pneumoniae	R		R	R	R	R	R	R			
375	MR PRAKASH SHIVRAM METRI	52	M	1040166	HTN	Ventilator asso	UN-CHANGED	7	3.5	ET	Klebsiella pneumoniae	R		R	R	R	R	R	R			
376	MR YUSUF MOHADDIN SATARE	70	M	1029086	DM,HTN	Ventilator asso	IMPROVED	7	10	ET	Klebsiella pneumoniae	R		R	R	R		R	R			
377	MR RUDRAPPA RAMAPPA HALALLI	70	M	996238	HTN	Chronic bronch	UN-CHANGED	7	10	ET	Klebsiella pneumoniae	S		R	R		S		R			
378	MR ASHOK BASAPPA HALINGALI	56	M	999061	DM,HTN	Ventilator asso	IMPROVED	100	7	ET	Klebsiella pneumoniae	R		R	R	R	R	R	R			
379	MR SUHAS HANAMANT KAMBLE	40	M	1011565	DM	COPD	IMPROVED	7	10	ET	Klebsiella pneumoniae	S		R	R		S		R			
380	MR UDAY GOPAL GONDKAR	50	M	1064244	NIL	Urethritis	IMPROVED	50	4	ET	Klebsiella pneumoniae	R		R	R	R	R	R	R			
381	MRS. SHOBHA SHIVAKUMAR KATTI	68	F	1018977	DM,HTN	Unknown Prim	IMPROVED	10	3.5	ET	Klebsiella pneumoniae	R		R	R	R	R	R	R			
382	MRS. REKHA CHAUHAN	22	F	1013856	NIL	Diabetic ulcers	EXPIRED	10	10	Pus	Staphylococcus Aureus	S		R	R		S		R			
383	MRS. POOJA SINGH	31	F	1015730	DM	Necrotising fas	IMPROVED	7	10	Pus	Staphylococcus Aureus			R						S	R	
384	MISS RENU MONDAL	20	F	1016122	NIL	Diabetic ulcers	IMPROVED	7	4	Pus	Staphylococcus Aureus			S						R	R	
385	MRS. TANGEVVA DESAI	88	F	1017665	HTN	Scrotal abscess	IMPROVED	50	10	Pus	Staphylococcus Aureus	S		S	S		S	S	S			
386	MR GANGAVVA NATIKAR	60	M	1018062	HTN	Submandibular	EXPIRED	7	10	Pus	Staphylococcus Aureus			R						R	R	
387	MRS. HASINA BEGUM	66	F	1018733	DM	Diabetic ulcers	IMPROVED	10	10	Pus	Staphylococcus Aureus			R								
388	MR AKSHAY KULKARNI	59	M	1019396	DM	Necrotising fas	IMPROVED	10	10	Pus	Staphylococcus Aureus	S		R	R		S		R			
389	MRS. MONIKA PATRO	20	F	1019615	NIL	Diabetic ulcers	IMPROVED	12	10	Pus	Staphylococcus Aureus			R						R	R	
390	MR BASAVANNA BADIGER	56	M	1019619	HTN	Scrotal abscess	IMPROVED	7	10	Pus	Staphylococcus Aureus			R						R	R	
391	MRS. LAKSHMI PUJARI	25	F	1019632	HTN	Submandibular	IMPROVED	50	7	Pus	Staphylococcus Aureus			R						S	S	
392	MR BASAVANT GAIKWAD	60	M	1020241	HTN	Necrotising fas	IMPROVED	10	10	Pus	Psuedomonas Aeruginosa			R						S	R	
393	MR MAHADEV MALLAPPA	55	M	1020451	NIL	Diabetic ulcers	EXPIRED	15	10	Pus	Psuedomonas Aeruginosa			R						S	S	
394	MRS. RATNAVVA FAKIR KOCHARAGI	61	F	1020546	DM,HTN	Necrotising fas	IMPROVED	10	10	Pus	Psuedomonas Aeruginosa	S			R			R				
395	MR SURESH BADIGER	45	M	1020641	NIL	Pneumonia	IMPROVED	7	7	Sputum	Streptococcus pneumoniae									S	S	
396	MR SRIRAM KHAVATI	50	M	1021536	DM	Lung abscess	IMPROVED	10	10	Sputum	Streptococcus pneumoniae			R						S	S	
397	MRS. SHANTA SHANKAR SIDRAM	58	F	1022243	DM	Pneumonia	UN-CHANGED	10	7	Sputum	Streptococcus pneumoniae									S	R	
398	MRS. CHAMPAVVA SRINU NAIK	40	F	1022242	NIL	Pharyngitis	UN-CHANGED	15	7	Sputum	Streptococcus pneumoniae			S								
399	MR KIRAN MALLAPPA BADUGU	20	M	1022660	HTN	Pneumonia	UN-CHANGED	7	4	Sputum	Streptococcus pneumoniae	S		R	R		R		R			
400	MR CHANNAPPA TURAMARI	51	M	1023266	HTN	Tracheobronch	IMPROVED	10	7	Sputum	Streptococcus pneumoniae			R						R	R	
401	MR SANJAY FAKEERAPPA	40	M	1023338	DM	Pharyngitis	IMPROVED	12	4	Sputum	Streptococcus pneumoniae	S		R	R		S					
402	MR BASAPPA CHANNAMETRI	46	M	1023365	DM	Pneumonia	EXPIRED	7	10	Sputum	Streptococcus pneumoniae	S			S	S		S				
403	MR RAMESH HOLEPPA PATIL	55	M	1023800	NIL	Pneumonia	IMPROVED	12	7	Sputum	Streptococcus pneumoniae	S		R	R	R	R		R			
404	MR SHRIKANT GANGAPPA DHUPADAL	56	M	1025689	HTN	Lung abscess	UN-CHANGED	12	7	Sputum	Streptococcus pneumoniae			R						R	R	
405	MRS. MAHADEVI SIDDAPPA TALWAR	59	F	1024106	HTN	Pneumonia	EXPIRED	7	4	Sputum	Haemophilus influenzae			R						R	R	
406	MRS. AASMA INAYAT BIHARI	24	F	1024331	HTN	Pharyngitis	UN-CHANGED	12	7	Sputum	Haemophilus influenzae			S						S		
407	MR BAPUGOUDA NEERAJ PATIL	40	M	1024505	NIL	Tracheobronch	IMPROVED	10	10	Sputum	Haemophilus influenzae	R			R	R		R				
408	MR PRABHAKAR ANUJ KAMBLE	52	M	1012566	DM,HTN	Pneumonia	IMPROVED	7	10	Sputum	Haemophilus influenzae	R		R	R	R	R	R	R			
409	MR ASHISH PARASHURAM	26	M	1012760	NIL	Pneumonia	EXPIRED	10	3.5	Sputum	Haemophilus influenzae			R								
410	MR BHARMU VILAS TORE	48	M	1013182	DM	Tracheobronch	IMPROVED	12	7	Sputum	Klebsiella species	R		R	R	R	R	R	R			
411	MR MAHABALESHWAR TORNA MALLAPPA	68	M	1014972	HTN	Pneumonia	IMPROVED	10	10	Sputum	Klebsiella species	S		R	R		S		R			
412	MR TARANATH PRAKASH GOUD	48	M	5395069	HTN	Pneumonia	IMPROVED	100	7	Sputum	Klebsiella species	R			R			R				
413	MRS. VIMAL AMIT DESHPANDE	55	F	1013683	NIL	Tracheobronch	IMPROVED	50	10	Sputum	Staphylococcus Aureus	R		R	R	R	R	R	R			
414	MRS. SUMITRA AJAN PATIL;	61	F	1013689	HTN	Pneumonia	IMPROVED	10	4	Sputum	Staphylococcus Aureus	S		R	R	R	S		R			
415	MRS. REKHA TARAK GOUD	22	F	1014085	HTN	Tracheobronch	UN-CHANGED	10	10	Sputum	Staphylococcus Aureus	S	R	R				R	R			
416	MR PRABHAKAR NARESH KUMAR	73	M	1013966	NIL	Diabetic ulcers	EXPIRED	12	10	Pus	Klebsiella pneumoniae	R		R	R	R	R	R	R			
417	MR ASHOK ANIL DHUPADAL	69	M	1014162	DM	Scrotal abscess	IMPROVED	10	10	Pus	Klebsiella pneumoniae	S		R	R	R	R	R	R