| BP 01 | Antimicrobial susceptibility pattern of *pseudomonas aeruginosa*  
Clinico-microbiological study of infections in the Intensive care unit and study of antimicrobial resistance in bacterial isolates |
| BP 02 | A study- Prevalence of positive blood culture samples from Omega Hospital, Mangalore  
Prevalence and Antibiotic Susceptibility Pattern of Clinical Isolates of Pseudomonas aeruginosa in a Tertiary care hospital  
A Retrospective Study |
| BP 03 | Study of Nasal Carriage of MRSA among the Clinical Staff and Health Care Workers Of Shri B M Patil Medical College  
Bacteriological profile of neonatal sepsis in tertiary care hospital  
Microbiological study of water from different resources of Bagalkot, North Karnataka  
Study of Nosocomial Urinary tract Infections with Special Reference to Candidurias at BLDEU’s Shri B.M.P. Medical College in Bijapur, Karnataka |
| BP 04 | Prevalence of virulence genes *hly, pap C* and *cnf-1* in uropathogenic *Escherichia coli* isolated from diabetics  
Nocardia in buccal space abscess-an oral manifestation |
| BP 05 | Prevalence of *Clostridium difficile* and its toxin detection from diarrheal stools at Father Muller Medical College  
Bacteriological profile and antibiogram of chronic ear infections  
A Sporadic Outbreak of B.cepacia Complex Bacteraemia in Paediatric ICU of a tertiary care hospital in Coorg  
Evaluation of bacteriological flora in oral and maxillofacial infections |
| BP 06 | Comparative Evaluation Of Two Blood Culture Methods In The Diagnosis Of Human Brucellosis  
Aggregatibacter actinomycetemcomitans and Anaerobes in periodontal infections  
Carbapenem resistance in clinically significant non fermenting gram negative bacilli  
Evaluation of the Antimicrobial Activity of ethanol extract of *Phyllanthus debilis* against Multi Drug Resistant Bacteria |
| BP 07 | Occurrence of Mupirocin resistance among MRSA isolates in a tertiary care hospital in Bangalore  
Effect of Fluoride/Chlorhexidine varnish on *Streptococcus mutans* biofilms  
Characterisation and antibiogram of urinary tract infections in a tertiary care set-up  
Detection of metallo-beta-lactamase in clinical isolates of *pseudomonas aeruginosa* |
| BP 08 | A one year review of neonatal blood culture at Kasturba Medical College Mangalore  
Aerobic bacteriological study of chronic suppurative otitis media with particular reference to its antibiogram  
Prevalence, species distribution, virulence and antibiotic sensitivity pattern of *Citrobacter*  
Bacteriological analysis of well water in Mangalore |
| BP 09 | Effectiveness of different disinfectants used in various wards of hospital  
Brucella infections in high risk population and in patients hospitalised for fever: Serological study at Kolar, Karnataka  
Antibiotic susceptibility profile of *Staphylococcus aureus* from clinical isolates in a tertiary care hospital in Mangalore  
Antibiotic susceptibility pattern of *Enterococcus* spp. isolated from Post-operative wound infection  
Nasal carriage status of *Staphylococcus aureus* amongst people working in diagnostic microbiology laboratories |
| BP 10 | Antibiotic susceptibility profile of *Enterococcus* spp isolated from Urinary tract infection  
Methicillin resistant Staphylococcus aureus (MRSA) infections in a tertiary care center: An attempt to expose the lineage |
| BP 11 | Microbial Assessment of Dental Unit Water Lines in an Institutional Setup  
Prevalence of asymptomatic urinary tract infection among HIV sero-positive patients  
Screening wood rotting fungi for Anti-MRSA compounds  
Isolation and identification of bacterial pathogens from blood stream infections and role of multi drug resistant bacteria |
BP01 Antimicrobial susceptibility pattern of *pseudomonas aeruginosa*

Dr Atiya kausar¹, Dr Prashanth HV², Dr Prakash R³, Dr Girish Babu RJ³, Veena Krishnamurthy³, Dr Savita Hiremath.¹ PG student, 2-Professor, 3- Asst Professor

Sri Siddhartha Medical College, Tumkur.

**INTRODUCTION:**

*Pseudomonas aeruginosa* is a gram negative bacterium that continues to be a major cause of opportunistic nosocomial infections, causing around 9-10% of hospital infections. Nosocomial infections caused by this organism are often hard to treat because of both intrinsic resistance of the species and its remarkable ability to acquire further resistance mechanism to multiple groups of antimicrobial agents including β-lactams, aminoglycosides and fluoroquinolones. The present study was undertaken to find out the antibiotic resistance pattern of pathogenic isolates of *P. aeruginosa* from various specimens.

**MATERIALS AND METHODS:**

The samples were selected on the basis of their growth on routine MacConkey medium which showed lactose non-fermenting pale colonies which were oxidase positive and on nutrient agar pigmented and non-pigmented colonies with oxidase positive. Colonies were subjected to biochemical tests to identify pseudomonas species. Antimicrobial susceptibility of all the isolates was performed by disc diffusion (Kirby –Bauer) method according to CLSI guidelines.

**RESULTS:**

A total of 124 *P. aeruginosa* samples were isolated. The antimicrobial patterns of isolates showed that 5.1% isolates were resistant to imipenem, 79% to ceftazidime, 46.7% to amikacin, 44% to ciprofloxacin, 49% to gentamicin, 52% to norfloxacin, 50% to tobramycin, 21% to pipracilin-tazobactam, 72% to cotrimoxazole.

**CONCLUSION:**

The irrational and inappropriate use of antibiotic is responsible for the development of resistance of *pseudomonas* species to antibiotic monotherapy. Here there is a need to emphasize the rational use of antimicrobial & strictly adhere to the concept of reserve drugs to minimize the misuse of available antimicrobial.
BP02 Clinico-microbiological study of infections in the Intensive care unit and study of antimicrobial resistance in bacterial isolates

Authors: Vijaya, Saldanha Dominic R.M., Shalini Shenoy, Department of Microbiology, Kasturba Medical College, Mangalore, Manipal University

Introduction:

Infectious disease specialists have long recognized that the risk of ICU patients acquiring nosocomial infections is 5-10 times greater than those in general wards. Several factors such as severe underlying disease, multiple illnesses, malnutrition, extremes of age, immunosuppression, use of invasive medical devices, ICU crowding and animate reservoirs increase the risk of acquiring infections in the ICU. Bacteria such as Klebsiella, Staphylococcus aureus, E. coli, Pseudomonas are among the most common causative agents of nosocomial infection. Control of these infections poses a major problem in treating the patients because of the rising trend of drug resistance among these bacteria.

The present study has focused on the clinic-microbiological aspects of infection in the ICU with emphasis on antimicrobial resistance among the bacterial isolates of ICU infections.

Materials and methods:

Specimens such as pus, urine, sputum, blood, intravenous catheters, endotracheal aspirates, body fluids were collected from patients admitted to the ICU of Government Wenlock Hospital and processed at the department of Microbiology, K.M.C. Mangalore. Interpretation was done following direct microscopy and culture, and identification and sensitivity of isolates performed as per standard microbiological procedures.

Results:

A total of 113 bacterial isolates were obtained from 100 clinical specimens. The commonest isolate was S. aureus (21.2%) followed by Klebsiella (20.4%), Pseudomonas spp. (15%), E. coli and Acinetobacter (14.2%). A total of 58.3% MRSA (among S. aureus) and 56.4% ESBL producers (among E. coli and Klebsiella) were obtained.

Conclusions:

The study results emphasize the importance of continued surveillance to correctly guide treatment. Knowledge of infection rates, common pathogens, their antibiograms and risk factors are important strategies for control.
BP03 A study- Prevalence of positive blood culture samples from Omega Hospital, Mangalore.

Dr. Bharathi Prakash*, Mr. Sohan Bangera, Ms. Fay D’Souza,
(*Lab Head, Omega Laboratory Services, Hospital, Mangalore)

Abstract

Introduction

Blood cultures are an essential component of good clinical care in the diagnosis and management of blood stream infections. However, the low yield of positive blood culture limits their usefulness. A study was carried out to know the prevalence of positive blood culture samples from Omega Hospital.

Materials and Method

200 samples collected over a period of 14 months, received at Omega laboratory for diagnosis were used in this study. The blood culture samples were processed by conventional blood culture method using Brain Heart Infusion Broth and inoculated into Blood agar and Mac Conkey agar and incubated at 37ºC. Growth was observed after 24 hrs and identified by Gram stain and biochemical reactions. In case of no growth the samples were further incubated for 7 days.

Result and Conclusion

Out of 200 samples, 22 samples (12 male and 10 female) were positive for blood culture. After 24 hrs of incubation, the organisms isolated were Escherichia coli-4, Pseudomonas spp – 4, Bacillus spp -3, Staphylococcus spp -3, Burkholderia-2, Diphtheroids -1, Candida-1, Acinetobacter -2, Enterococcus spp -1 & Non fermenter-1

Our study showed only 11% samples positive with higher occurrence of E.coli and Pseudomonas Spp. reflecting predominance of Gram negative bacteria. To reduce the contaminants like Bacillus spp., proper aseptic conditions were implemented by trained phlebotomists which reduced the rate of blood culture contamination.
Prevalance and Antibiotic Susceptibility Pattern of Clinical Isolates of Pseudomonas aeruginosa in a Tertiary Care Teaching Hospital – A Retrospective Study.

Saloni Agarwal*, Rekha Rai, Vimal Kumar Karnaker
Department of Microbiology, K.S. Hegde Medical Academy, Nitte University, Mangalore.

Pseudomonas aeruginosa is a gram-negative bacterium that continues to be a major cause of opportunistic nosocomial infections, causing around 9–10% of hospital infections.\(^1\) P. aeruginosa is a ubiquitous organism present in many diverse environmental settings.\(^2\)

**Purpose of the study** To determine the prevalence of P. aeruginosa in clinical isolates and its susceptibility pattern to commonly used antibiotics.

**Materials and methods** Two hundred and three isolates of P. aeruginosa were obtained from inpatients with significant clinical details from a tertiary care teaching hospital for a period of one year from August 2011 to July 2012. Antibiotic susceptibility was determined by Kirby Bauer’s disc diffusion method with first line and second line antipseudomonal antibiotics. **Results** – Among the first line antibiotics a high rate of resistance was seen towards Ciprofloxacin (34.48%) followed by Levofloxacin (31.52%), and the least was towards Amikacin (21.67%), whereas, most of the second line antibiotics such as Polymyxin B and Colistin showed a high degree of sensitivity (99.02%). **Conclusion**-The ability of the opportunistic pathogen P. aeruginosa to rapidly develop resistance to multiple classes of antibiotics during the course of treatment makes it important to determine the antibiotic susceptibility pattern. As the pipeline of new drugs continues to diminish, it is critical that we look for new strategies to combat the threat of antibacterial resistance.

*Saloni Agarwal (<drsalonij@yahoo.in>)
Post Graduate Student,
Department of Microbiology,
K.S. Hegde Medical Academy, Nitte University,
Mangalore.
Study of Nasal Carriage of MRSA among the Clinical Staff and
Health Care Workers Of Shri B M Patil Medical College Bijapur,
Karnataka.

Lakshmi S Kakhandki, Smitha Bagali, Prashanth Parandekar.

Department of Microbiology, BLDEU’s Shri BM Patil Medical College, Solapur Road,
Bijapur

ABSTRACT

Objective: The present study was conducted to evaluate the rate of nasal carriage of MRSA among staff working at our hospital with an aim to prevent the hospital acquired infections.

Background: MRSA colonisation precedes infection, anterior nares being the ecological niches of Staphylococcus aureus. Carriage of Staphylococcus aureus in the nose appears to play a key role in the epidemiology and pathogenesis of hospital acquired infections. MRSA is usually introduced into an institution by a colonised or infected patient or a healthcare worker.

Methods: A total of 200 nasal swabs were collected, cultured on to blood agar and mannitol salt agar, incubated at 37 °C for 24 hrs. Staphylococcus aureus was identified by standard methods according to CSLI guidelines. Methicillin resistance was detected by using cefoxitin disc 30µgm on Mueller Hinton agar with 4% NaCl.

Results: Of the 200 samples screened 45 (43.6%) strains of Staphylococcus aureus were isolated, out of which 24 (12%) were MRSA and 21 (10%) were MSSA. The overall carriage rate of MRSA in our study was 12% with the highest rate being seen among the nursing staff (12.2%) and clinical staff carriage rate was slightly less (11.7%) as compared to the nursing staff.

Conclusion: Nursing staff were the potential colonisers of Staphylococcus aureus and MRSA when compared to clinical staff, who were treated with Mupirocin 3 times daily for 5 days. So regular screening of carriers is required for the prevention of nosocomial infection.

Key Words: Nasal Carriers, Mupirocin, MRSA.
BP06 BACTERIOLOGICAL PROFILE OF NEONATAL SEPSIS IN TERTIARY CARE HOSPITAL

Ronni Mol P, Aparna Y Takpere, P K Parandekar

Department of Microbiology, Sri BM Patil Medical College, Bijapur

ABSTRACT:

Introduction: Neonatal sepsis is one of the major causes of morbidity and mortality in newborn. Early identification of the organism and appropriate antibiotic treatment is essential to prevent the increasing mortality and morbidity. Blood culture remains as the gold standard for diagnosis of neonatal sepsis. Materials & Methods: Relevant data of neonates born during the study period were obtained from their case records. A diagnosis of neonatal septicemia was made based on clinical features and positive bacterial culture. Statistical analysis was done using Odds Ratio or Chi-square test and Fishers exact t-test as applicable. Results: Among 143 cases studied early onset sepsis was seen in 128 (89.51%) and late onset sepsis was seen in 15 (10.48%). Significant association of neonatal sepsis was seen with PROM, perinatal asphyxia, premature delivery, LBW and clinical diseases. Among the cases studied 39 (27.27%) were culture positive in which Klebsiella was the commonest (33.3%) with antibiotic sensitivity of 61.5% to Amikacin followed by Ofloxacin, Tetracycline and Ciprofloxacin. Other pathogens isolated were CONS (20.51%), Acinetobacter (17.94%), Gram negative Non Fermenters (12.82%), Enterococcus species (5.12%), Streptococcus species (2.56%) and Escherichia coli (2.56%). Conclusion: Klebsiella and CONS were the predominant causative organism in our hospital. Knowledge of likely causative organism of neonatal septicemia can help in instituting prompt and appropriate therapy, in order to reduce morbidity and mortality.
INTRODUCTION:

The microbiological examination of water is used to monitor and control the quality and safety of various types of water.

Human Diseases such as typhoid fever, cholera and other diarrheal diseases are water borne. It is thus impractical to screen samples for all possible pathogens. Instead various indicator organisms have been used as strong markers of risk. Most of water borne diseases are related to faecal pollution of water sources. Therefore water microbiology is based on identifying the indicators of faecal pollution such as coliforms.

In the interest of public health the present study is conducted in S. Nijalingappa Medical College Bagalkot

MATERIALS AND METHODS:

A total of 30 water samples were collected in a sterile container from 10 different water sources. The study was carried out for 2 months ie between December 2012 and January 2013. Microbiological examination of water is done for the presence of coliforms and were determined by multiple tube fermentation test method. Biochemical reactions were carried out for the identification of bacterial isolates.

RESULTS : Out of 10 different water sources 7 were positive for coliforms and 3 were negative. From positive water samples *E.coli, Pseudomonas aeruginosa, Citrobacter freundii* and *Klebsiella* were isolated.

CONCLUSION: Water positive for coliforms is associated with health risk and is not suitable for drinking and bathing purpose. Hence continuous monitoring of such water is needed.
BP08Study of Nosocomial Urinary tract Infections with Special Reference to Candiduria at BLDEU’s Shri B.M.Patil’s Medical college and Hospital, Bijapur, Karnataka.


Department of Microbiology, Sri BM Patil Medical College, Bijapur

**Introduction:** Nosocomial urinary tract infections are the most common of hospital acquired infections comprising about 40%. Majority are related to catheterization or other predisposing factors. Candiduria is rarely encountered in otherwise healthy people with structurally normal urinary tract. It is however of common occurrence in hospitalized patients. Candida spp. account for almost 10-15% of nosocomial urinary tract infections.

**Objectives:** Present study was undertaken to identify various pathogens causing nosocomial UTI, identification of yeasts and to analyze the various risk factors associated with candiduria in hospitalized patients. **Materials and Methods:** 195 urinary isolates of patients admitted in hospital >3 days were screened. The bacterial and yeast isolates were identified by conventional methods. **Results:** Of the 195 samples screened, 64(32.8%) were sterile whereas 114(58.4%) yielded Bacterial growth while 17 (8.7%) were candida species. Amongst the bacterial isolates, E.coli(25.6%) was the most common followed by Citrobacter spp.(10.76%),Klebsiella pneumoniae (8.2%) and others. Whereas, among the Candida isolates C.tropicalis(41.1%) was found to be predominant followed by C.guillermondi (23.5%), C.albicans (17.6%), C.krusei (11.7%) and C.glabrata (5.8%). In the present study we observed that majority of the patients were having predisposing factors. **Conclusion:** Non albicans species are predominant amongst the Candida isolates, majority of patients were having predisposing factors emphasizing the need of proper surveillance of Nosocomial UTI for appropriate treatment.
BP09 Prevalence of virulence genes hly, pap C and cnf-1 in uropathogenic Escherichia coli isolated from diabetics with urinary tract infection

H. Anandkumar1, G. Soham2, CS Vinodkumar3, D. Achut Rao1, H. Srinivasa2

1 Department of Microbiology, Navodaya Medical College, Raichur
2 Department of Microbiology, St. John’s Medical College, Bangalore
3 Department of Microbiology, SS Institute of Medical Sciences, Davangere

Background: The urinary tract is the common site of infection in the diabetic host. In addition to the higher risk of developing UTI, diabetics have increased risk of developing complications of UTI, such as emphysematous cystitis, abscess formation, pyelonephritis, and renal papillary necrosis. Some virulence factors (VF)s such as haemolysin (hly gene), cytotoxic necrotizing factor type 1 (cnf-1 gene), pyelonephritis associated pili (pap gene), play important roles in the pathogenicity of E.coli strains by overcoming host defense mechanisms to cause the disease. But host compromise can reduce the pathogenic importance of certain VFs. So it becomes important to identify VFs that remain prevalent even among compromised hosts.

Methods: E. coli isolated in significant number from diabetic subjects were tested for mannose resistant haemagglutination (MRHA) to indicate P fimbriae and haemolysin production. The prevalence of virulence gene was determined by PCR.

Results: Forty three strains of Escherichia coli were isolated from cases of pyelonephritis (11) and lower urinary tract infection (32) from diabetic cases. Haemolysin production was seen in 22 (51.1%) strains and MRHA in 16 (37.2%) strains. The predominant gene detected was pap C (53.5%) followed by hly gene (25.6%) and cnf-1 gene (13.9%). Eleven (68.1%) MRHA strains have shown pap C gene. Among pyelonephritis cases occurrence of pap C gene was 72.7%.

Conclusion: Our study demonstrated higher prevalence of pyelonephritis in the presence of virulence gene pap C. Detection of this gene in UPEC among diabetics may help in early prediction of UTI complication and management.
CASE REPORT: NOCARDIA IN BUCCAL SPACE ABSCESS – AN ORAL MANIFESTATION

Dr. Rameez Raja (PG), Dr. Beena, Dr. Kavitha K., Dr. Sandeep, Dr. Indumathi V. A

M. S. Ramaiah Medical College, Bangalore

Nocardia is a weakly staining Gram positive bacilli. It forms partially acid fast beaded branching filaments. Nocardia is found in soil rich in organic matter. They also form a part of oral microflora. Nocardia commonly cause infection in immunocompromised patients, but has been reported to cause infections in immunocompetent patients also. Nocardiosis can be divided into 2 categories – disseminated and cutaneous. Disseminated nocardiosis is commonly seen in immunocompromised patients whereas in immunocompetent patients, they commonly present as pustules, abscess or cellulitis which can mimic diseases caused by more common organisms.

Here we report a case of oral nocardiosis in a 50 year old male patient who is a known diabetic. He presented with painful swelling on the left side of the face since one year with intermittent pus discharge intraorally. Incision and drainage was done for the abscess and pus was sent for routine culture and sensitivity, without suspecting nocardial infection. On Gram’s stain, numerous WBCs, occasional Gram positive cocci in clusters and numerous filamentous Gram positive bacilli were seen. Acid fast staining with 1% sulphuric acid showed long filamentous branching acid fast bacilli. Culture put on various media showed the growth of Coagulase negative Staphylococcus and nocardia species. The patient responded to Amoxycillin-clavulanic acid and Amikacin. Repeat culture after treatment did not yield nocardia.
BP11 Prevalence of Clostridium difficile and its toxin detection from diarrheal stools at Father Muller Medical College, Mangalore - A preliminary study.

Sherin Justin*, Beena Antony**

Department of Microbiology

Father Muller Medical College, Mangalore, Karnataka.

Abstract

Introduction

Clostridium difficile, an anaerobic, Gram positive spore forming bacillus, is reported to cause pseudomembranous colitis and antibiotic associated diarrhoea. Several risk factors predispose to Clostridium difficile-associated disease (CDAD). The study aims at semiquantitative isolation, characterization and toxin detection of Clostridium difficile from diarrheal stools with special reference to malignancy and paediatric cases.

Material and methods

The study was conducted in the Department of Microbiology, Father Muller Medical College, Mangalore for a period of one year starting from January 2012 to December 2012. The stool samples of 229 patients with diarrhoea were collected from various wards and the details of these patients were taken from medical records. Patient consent was obtained in the informed consent form.

Anaerobic culture on Cycloserine cefoxitin fructose agar (Hi Gaspak jar) and Enzyme immunoassay (for the toxins A & B) were performed on all the stool samples. Colonies presumptively identified as Clostridium difficile were subjected to Latex agglutination and confirmed biochemically. These specimens were also subjected for the isolation of other associated pathogens.

Results with conclusions

Out of 229 stool specimens, 46 (20.09%) were positive by Culture, 30 (13.10%) by Latex agglutination and 29 (12.66%) by Enzyme immunoassay.

*Research Scholar

**Professor
BP12 BACTERIOLOGICAL PROFILE AND ANTIBIOGRAM OF CHRONIC EAR INFECTIONS.

Dr T Nagarathnamma, Dr Rashmi R
Department of Microbiology, BMC&RI, Bangalore.

Introduction:

Chronic Suppurative Otitis Media (CSOM) is defined as chronic otorrhea between 6-12 weeks through a perforated tympanic membrane. CSOM is a major public health problem due to its chronicity and is marked by recurrent ear discharge and hearing impairment. Most common organisms isolated in CSOM are *P. aeruginosa*, *S. aureus*, Proteus spp, Klebsiella spp, Aspergillus species and Candida however these vary in different geographical areas.

Objectives:

To study the bacteriological profile of CSOM cases and their antibiotic sensitivity pattern.

Materials and methods:

100 ear discharge specimens from clinically diagnosed cases of Chronic Suppurative Otitis Media were cultured for bacteria aerobically. The organisms were identified and confirmed by standard biochemical tests. Antibiotic susceptibility testing was done by Kirby-Bauer disc diffusion method according to CLSI guidelines.

Results:

Of the 100 samples, 86 were culture positive for bacterial growth. 4.6% of the samples were found to have polymicrobial infection while 95.4% of the samples were found be monomicrobial. Bacterial isolates showed the predominance of *Staphylococcus aureus*(n=33, 36.6%) of which 19(57.5%) were MRSA, and *Pseudomonas aeruginosa*(n=28, 31.1%) of which 7(25%) were ESBL positive.

Conclusion:

Carbapenems were found to be the most effective drug for Gram negative organisms while Vancomycin and Linezolid were found to be the most effective for *S. aureus*. Cephalosporins were found to be least effective for Gram negative organisms while Penicillins were found to be least effective for *S. aureus*. 
A Sporadic Outbreak of B.cepacia Complex Bacteraemia in Paediatric ICU of a tertiary care hospital in Coastal Karnataka.

Beena Antony,* Elizabeth Varkey Cherian 2 ** Rekha B 3 * Shenoy KV 4 **

Dept. of Microbiology * and Dept. of Paediatrics **
Fr. Muller Medical College, Mangalore.

Introduction:

B.cepacia complex (BCC) is a well documented opportunistic pathogen in hospitalized and immunocompromised patients, particularly in cystic fibrosis. It is a well known animal and plant pathogen. It is widely distributed in natural habitats like soil, water and frequently encountered in nosocomial outbreaks due to contaminated disinfectants and medical devices. However reports on outbreaks due to this organism is lacking from Indian subcontinent. We report here a sporadic outbreak due to B.cepacia complex which occurred in the paediatric ICU of our institute, probable source being contaminated distilled water.

Materials and Methods:

Non fermenting, motile, gram negative bacilli isolated from all the blood sample of three babies and environmental sources including distilled water were morphologically and biochemically similar. They were presumptively identified as B.cepacia complex and then confirmed by VITEK 2 system. Strict infection control measures were instituted to prevent the spread of infection.

Conclusion:

This report highlights the potential role of B.cepacia in causing sporadic outbreaks especially in Intensive care units. It also emphasizes the clinicians to be vigilant about the possible sources of infection, management and surveillance. Assurance of the quality of water, the essential component in many procedures in the hospital set up and by periodical environmental sampling can reduce the hospital acquired infections associated with water.

1. Professor
2. Assistant Professor
3. Professor and HOD
4. Professor
EVALUATION OF BACTERIOLOGICAL FLORA IN ORAL AND MAXILLOFACIAL INFECTIONS

Dr. Parul Garg *, Dr. Jyoti Nagmoti

Department of Microbiology, Jawaharlal Nehru Medical College, Belgaum, Karnataka.

INTRODUCTION: Most of the Oral and Maxillofacial infections are of odontogenic origin. Microbiological flora of these infections are considered to be mixed by both aerobes and anaerobes

AIM: To study the relative frequency of aerobic and anaerobic isolates from oral and maxillofacial infections

MATERIALS AND METHODS: The study was carried out from January 2012- December 2012 in the Department of Microbiology, JNMC, Belgaum.

The study was conducted in 30 patients who had moderate to severe oral and maxillofacial infection with abscess in the orofacial region. Pus was aspirated and collected in freshly prepared thioglycollate broth medium.

Aerobic culture: Samples were subjected to Gram staining and inoculated onto Blood agar and Mac Conkey agar. The organisms were identified using standard biochemical methods.

Anaerobic culture: Specimens were cultured on blood agar supplemented with haemin & vitamin K. Anaerobiosis was created by McIntosh Fildes jar with internal gas generating system. Anaerobic bacteria were identified by level II identification system.

RESULTS: There were 18(60%) male and 12(40%) female patients. Submandibular space was most commonly involved. In 17(56.66%) cases both aerobes and anaerobes were isolated while 13 cases (43.33%) had monomicrobial infections. Out of total 47 isolates 25(53.19%) were anaerobes and 22(46.80%) were aerobes. Peptostreptococcus anaerobius was most common among anaerobes followed by Bacteriodes fragilis. Staphylococcus aureus was commonest aerobe followed by Streptococcus pyogens.

CONCLUSION:

In the present study the prevalence of anaerobic infection was 53.19% and of aerobic infections was 46.80% among oral and maxillofacial infections.
Comparative Evaluation Of Two Blood Culture Methods In The Diagnosis Of Human Brucellosis

Preeti Maste, S C Metgud,
Department of Microbiology, Jawaharlal Nehru Medical College, K.L.E University, Belgaum

Introduction
Brucellosis is a zoonotic disease with non-specific symptoms. Serological tests like Rose Bengal card test and Standarad Tube agglutination tests are commonly used for diagnosis. However these tests are not very specific Culture is the gold standard in the diagnosis. Conventional Castaneda blood culture is commonly used method, but it has low sensitivity(30-50%) & also takes a longer time for isolation. Hence this study was done to compare the two blood culture methods - Conventional Castaneda biphasic medium & lysis centrifugation techniques for isolation.

Materials & Methods
Blood samples from suspected cases of Brucellosis and high risk groups (Veterinary staff, Animal handlers) were included in the study. Blood sample (10 ml) was collected & put up for culture in Castaneda biphasic medium(5ml) & BHI agar(5ml) after lysis centrifugation. The isolates were confirmed as Brucella by Gram staining, Oxidase & Rapid Urease test.

Results
A total of 26 blood samples were put up for culture. Out of this 3(11.5%) were positive by Castaneda biphasic medium culture technique & 9(34.6%) by lysis centrifugation technique.

Mean number of days for culture positivity by Castaneda biphasic medium - 6 days.
Mean number of days for culture positivity by lysis centrifugation - 3 days

Conclusion
As Brucella is a slow growing intracellular organism, culture by lysis centrifugation technique increases the isolation rate by 25% & decreases the time duration of culture positivity compared to biphasic medium.
BP16 Aggregatibacter actinomycetemcomitans and Anaerobes in Periodontal infections.

Ramanath Karicheri*, Beena Antony**, Sham S Bhat***
Department of Microbiology
Fr. Muller Medical College, Mangalore, Karnataka – 575002.

Introduction:
Periodontal disease is a major health problem in India. Microbiological characterization of the destructive periodontitis revealed significant role of anaerobic gram negative bacilli and Aggregatibacter actinomycetemcomitans. These organism found more frequently and in higher number in patients with periodontitis than in the normal controls. The present investigation aims at the comparative evaluation of A. actinomycetemcomitans and anaerobes in the diseased sites from patients with periodontitis and normal controls by semi quantitative culture technique.

Materials and Method:
The present study conducted in the Department of Microbiology, Father Muller Medical College, Mangalore for a period of 18 months. 210 patients with various orodontal infections in the suburbs of Mangalore and 45 age matched healthy controls were included in the study. Samples were collected using multiple sterile paper points. Isolates obtained by culture were identified according to the standard procedures.

Results and Conclusion:
A significant growth of anaerobes isolated in the study are Prophyromonas - Prevotella group (51.42%), Peptostreptococci (25.23%) and Fusobacterium (19.25%). A. actinomycetemcomitans was isolated in 64 cases (30.47%). In control group no significant growth of these isolates were obtained by semiquantitation. The results of the study clearly implicates the frequent association of A. actinomycetemcomitans along with other anaerobes in periodontal infections.

* Research Scholar.
**Professor.
*** Professor & HOD, Paedodontics, Yenapoya Dental College, Mangalore.
BP17 CARBAPENEM RESISTANCE IN CLINICALLY SIGNIFICANT NON FERMENTING GRAM NEGATIVE BACILLI

Renu Sharma 1, Zenith Euphemia2, Sevitha Bhat3.

1,2: MSc students, Department of Microbiology, Kasturba Medical College, Mangalore.
3: Associate Professor, Department of Microbiology, Kasturba Medical College, Mangalore

Background and objectives: Carbapenemase production is an important mechanism of carbapenem resistance in NFGNB. Acquired MBL’S have been reported in Pseudomonas and Acinetobacter spp. The present study was undertaken to study the incidence of MBL production in Pseudomonas and Acinetobacter spp. for a period of 1 year (January 2012-January 2013).

Methods: A total number of 93 Imipenem resistant NFGNB were speciated and their antibiotic susceptibility pattern was tested by Kirby bauer disc diffusion method. All the isolates with a zone size ≤19mm for imipenem were further tested to detect the presence of MBL by Imipenem-EDTA double-disc synergy test (DDST). Imipenem resistant, non MBL isolates were tested by Modified Hodge test & Amp C β lactamases.

Results: Of the 93 imipenem resistant NFGNB, 27(29.03%) were Pseudomonas spp, 66(70.96%) were Acinetobacter spp. Among them, 10(37.03%) Pseudomonas and 7(10.60%) Acinetobacter spp. were MBL positive by Imipenem EDTA double-disc synergy test (DDST). 5 Acinetobacter were AmpC positive and 1 strain of Pseudomonas showed positive Modified hodge test.

Interpretation and conclusion: MBL production is an important mechanism of carbapenem resistance among Pseudomonas spp. but not among Acinetobacter spp. Carbapenemases other than MBL may be responsible for carbapenem resistance in NFGNB.

Keywords: Carbapenem resistance, metallobetalactamases, Pseudomonas aeruginosa, Acinetobacter spp
BP18 Evaluation of the Antimicrobial Activity of ethanol extract of *Phyllanthus debilis* against Multi Drug Resistant Bacteria

Shobha K.L, Bernaitis L, Jiji mathew, Ashok M, Revathi P Shenoy

1Department of Microbiology, Melaka Manipal Medical College, Manipal Campus, 2Department of Microbiology, Kasturba Medical College, 3Department of Pharmacology, Kasturba Medical College, 4Department of Biochemistry, Kasturba Medical College, Manipal University, Manipal- 576104, Udupi District, Karnataka.

Abstract

Aim: Multidrug resistant (MDR) strains is a major nosocomial pathogen which causes severe morbidity and mortality worldwide. The evidence of rapid global spread of resistant clinical isolates, the need to find new antimicrobial agents is of paramount importance. The aim of this study was to evaluate the antimicrobial activity of ethanolic extract of *Phyllanthus debilis*. Plant selection was based on information obtained from the siddha medicine literature.

Materials and Methods: 20 multidrug resistant bacterial strains isolated from clinical specimens were identified as *Escherichia coli* (4 strains), *Klebsiella pneumoniae* (4strains), *Pseudomonas aeruginosa* (2strains), *Acinetobacter baumannii* (1strain), *Enterobacter cloacae* (1strain), *Enterococcus faecalis* (3strains), *Methicillin Resistant Staphylococcus aureus* (MRSA)(3strains), *Providencia rettgeri* (2strains). The ethanolic extract of *Phyllanthus debilis* was made and the antimicrobial susceptibility testing was done by agar dilution method and Minimum Inhibitory Concentration (MIC) values were determined.

Results: The MDR strains were sensitive to the antimicrobial activity of *Phyllanthus debilis* (MIC range 10-300μg/ml) having broad spectrum activity.

Conclusion: This study proved that *Phyllanthus debilis* can be used against multidrug resistant bacteria causing nosocomial and community acquired infections.
Mupirocin resistance in *Staphylococcus aureus* is increasing with increasing use of antibiotic to control the spread of methicillin- resistant *S.aureus* (MRSA). Mupirocin is a topical antimicrobial agent which is used for the treatment of skin and postoperative wound infections, and the prevention of nasal carriage of methicillin-resistant *Staphylococcus aureus* (MRSA). The present study was carried out to determine the mupirocin resistance among MRSA isolates and their antibiotic susceptibility pattern. A total of 80 non duplicate clinical isolates of *S. aureus* was isolated for a period of six months from a tertiary care hospital. The isolates were subjected to MRSA screening by phenotypic methods. MRSA were tested for mupirocin resistance by disc diffusion method (5µg) and by broth dilution method. Mupirocin resistant isolates were also characterized by antibiogram. Out of total 80 isolates, 61 (76.25 %) and 19 (23.75 %) of *S. aureus* were isolated from males and females respectively. The mean age of the study group was 40 years with an age span from <1 to 90 years old. Out of 80 isolates 43.8% and 41.3% isolates were mupirocin resistant by disc diffusion and by broth dilution method. High level mupirocin resistant isolates had MICs 1024 mg/l, whereas the low level resistant isolates had MICs of 256- 512 mg/l. The emergence of mupirocin-resistant *S. aureus* isolates should be of great concern to medical personnel in these countries. It is recommended that methicillin-susceptible *S. aureus* (MSSA) and MRSA should be routinely tested for mupirocin resistance even in facilities where the agent is not administered.
Effect of Fluoride/Chlorhexidine varnish on *Streptococcus mutans* biofilms

Jitendra¹, Uparna¹, Sanchit Paul², MS Kotian³, Ethel Suman¹

¹ Department of Microbiology, Kasturba Medical College, Mangalore
² Department of Pedodontics, MCODS, Mangalore
³ Department of Community Medicine, Kasturba Medical College, Mangalore

Abstract

**Background:** Fluoride/Chlorhexidine varnish is on trial to prevent dental caries and the effect of this varnish on the biofilm produced by *Streptococcus mutans* needs to be determined.

The aim of this study was to evaluate and compare the effect of Fluoride/Chlorhexidine varnish on biofilm produced by *Streptococcus mutans in vitro.*

**Methods:** *Streptococcus mutans* isolated from the plaque of 30 patients prior to varnish treatment and following treatment were used for the study. Biofilm production was done by the method of O’ Toole and Kolter and OD values were recorded spectrophotometrically at 24h, 48h and 72h. The same was repeated after 48h, 1 month and 3 months after varnish treatment. The amount of biofilm produced was evaluated at 24h, 48h and 72h. Statistical analysis was performed by using SPSS version 11.5 and ANOVA, Kruskall Wallis and Mann Whitney U test were performed.

**Results:** Although *Streptococcus mutans* was isolated from all 30 patients prior to varnish treatment, it was isolated from only 24 of them after varnish treatment which could be attributed to the antibacterial effect of the varnish applied. However, in the same patients, *Streptococcus mutans* was isolated from all 30 of them after 1month and 3 months following treatment. There was a significant decrease in biofilm production by the isolates after treatment with varnish.

**Conclusion:** Our study suggests that although there is gradual loss of effect of Fluoride/Chlorhexidine varnish on viability of *Streptococcus mutans* in dental plaque, it can decrease the biofilm producing property of the organism *in vitro.*
BP21 CHARACTERISATION AND ANTIBIOGRAM OF URINARY TRACT INFECTIONS IN A TERTIARY CARE SET-UP

AUTHORS- Dr. Vidhya, First year PG- presenting author
          Dr. Jagadishchandra K, Associate Professor
          Dr. Sunil Rao Padmaraj, Professor and HOD

Department of Microbiology, Yenepoya Medical College, Deralakatte, Mangalore-575018

INTRODUCTION-
Antibiotic resistant urinary tract infections are a serious concern in Indian hospitals. This study aims at characterization, antimicrobial susceptibility patterns amongst the suspected UTI in hospitalized patients.

OBJECTIVES-
To identify the bacteria responsible for UTI, their antibiotic resistance patterns to aid in therapy.

MATERIAL AND METHODS-
Mid-stream clean catch urine samples from a total of 400 patients (non-op and non-pregnant) with clinical suspicion of UTI, were subjected to culture and antibiotic sensitivity by standard methods. Sensitivity was performed by Kirby-Bauer disc diffusion method.

RESULTS-
Of the 400 urine samples collected over a period of 4 months, 86(21.5%) yielded significant bacteriuria. E.coli (53%) was the predominant pathogen followed by Klebsiella(19.8%); Acinetobacter(5.8%), Proteus( 3%), Enterococcus(6.9%), Candida (9.3%), others 2.3% .These included 25 samples from catheterized patients. 3.5% isolates showed resistance to all antibiotics tested. Ampicillin resistance was found in 93% and 70.4% for other β-lactams, 90% were sensitive to β-lactam-clavulanic acid combinations, 70% were sensitive to aminoglycosides, 60% were sensitive to nitrofurantoin, 96% to imipenem, 66.2% were resistant to fluoroquinolones among the Gram negative isolates. ESBL producers were in substantial numbers (67.6 %). All the Enterococci were resistant to beta-lactams, fluoroquinolones, 50% sensitive to macrolides and aminoglycosides and all were sensitive to vancomycin.

CONCLUSION-
UTI have a diverse etiology in the hospitalized patients. Coliforms still play a major causative role. A high rate of ESBL producing GNB along with hospital acquired Acinetobacter is a matter of concern in the management of these infections and calls upon for stronger antibiotic policies.
ABSTRACT:

Introduction: Emergence & rapid spread of multi-drug resistant Pseudomonas aeruginosa causing nosocomial infection is of great concern. Carbapenem group of antibiotics play a vital role in management of hospital acquired gram negative infections. In recent years there has been an increase in carbapenem resistance due to production of metallo beta lactamase (MBL) enzyme in the Pseudomonas aeruginosa and these isolates are also associated with higher morbidity & mortality. Therefore present study is aimed to detect MBL production in P. aeruginosa isolates for appropriate treatment and prevention of its dissemination in hospital environment. Materials & Methods: A total of 59 isolates of P. aeruginosa were studied. Antimicrobial susceptibility of isolates were performed by disc diffusion method according to CLSI guidelines. Isolates resistant to Imipenem were tested for the presence of MBL enzyme by Imipenem-EDTA combined disc test developed by Yong et al. Results: Out of 59 isolates of Pseudomonas aeruginosa 8 (13.5 %) were resistant to imipenem & all were found to be MBL producing. Conclusion: MBL production is a significant problem in clinical isolates of P. aeruginosa which should not be ignored. This study emphasizes that all the imipenem resistant Pseudomonas aeruginosa should be tested for MBL production by simple test like Imipenem – EDTA disc method in any clinical microbiology lab, not only for appropriate treatment of patient but also to prevent dissemination of such strains in hospital environment.
MP23 A one year review of neonatal blood culture at Kasturba Medical College Mangalore

Meghna C, ShrikalaB, SuchitraShenoy, Vidyalakshmi K

Background
Infection remains a major cause of illness and death in the neonatal period. Neonatal mortality is an important global public health challenge. Newborn babies have an immature immune system and therefore may not elicit all signs of infection, and delay in treatment may lead to serious consequences.

Aims/Objectives
To study the bacterial isolates in neonatal blood culture from 2011 to 2012 at KMC Mangalore

Materials and Methods
Blood culture isolates from neonates (birth to 28 days postnatal) received at the KMC laboratory Light House during a year (Jan 2011 to Dec 2011) were included in the study. A retrospective study was carried out using relevant data from the unit register or neonatal case records. Conventional Blood cultures were performed and subcultured at 24 hrs, 48 hrs, 4 days and 7 days on Chocolate agar and MacConkey’s agar. Antibiotic susceptibility testing was done using Kirby-Bauer disc diffusion method.

Results and Discussion
A total of 327 blood cultures were received. Of the total, majority (69.7%) of the blood cultures were sterile. Among the bacterial isolates, Staphylococcus aureus (13.5%) amounted to maximum followed by Klebsiella spp (5.2%), Acinetobacter spp (3.7%), Pseudomonas spp (2.8%), Escherichia coli and other non-fermenting gram negative bacteria 1.2% each, Enterobacter spp (0.9%), Citrobacter spp, coagulase negative staphylococcus and Streptococcus spp (0.6%), Enterococcus spp and Proteus mirabilis (0.3%).

Of the 44 isolates of S. aureus, 9 were MRSA. All were sensitive to vancomycin. Among the Klebsiella isolates 76% to cefotaxime, 41% were resistant to amikacin, 23.5% were resistant to cefaperazone/sulbactum, and 6% to imipenem. Acinetobacter spp, 17% resistant to imipenem, 25% to netilin, 50% to amikacin, ampicillin, cefotaxime and ceftriaxone. Pseudomonas spp 100% sensitive to carbenicillin, cefotaxime and ceftriaxone.
BP24 AEROBIC BACTERIOLOGICAL STUDY OF CHRONIC SUPPURATIVE OTITIS MEDIA WITH PARTICULAR REFERENCE TO ITS ANTIBIOGRAM

Kruthika.P 1, V. L. Jayasimha 2, K.G. Basavarajappa 3, K.V. Yogeesh Babu 2 and C.S. Vinod kumar 4

1. Post Graduate Student, 2. Professor, 3. Professor and Head, 4. Associate Professor

Department of Microbiology, S.S. Institute of Medical Sciences & Research Centre, Davangere.

Introduction:- Chronic Suppurative Otitis Media (CSOM) is a major health problem in all age groups, but more common in children belonging to lower socioeconomic group. The widespread use of antibiotics has precipitated the emergence of multiple resistant strains of bacteria. Bacterial predominance and their antibiotic sensitivity pattern change over time. The purpose of this study was to identify the common aerobic bacterial pathogens and to evaluate their antibiotic susceptibility pattern.

Materials and Methods:- 50 isolates from clinically diagnosed Chronic suppurative otitis media patient’s bacterial isolates collected from ENT OPD of S.S.Institute of medical Sciences and Research Centre, Davangere, constituted the study group. The samples obtained were subjected to aerobic bacteriological culture and identified by standard conventional techniques with antibiogram by Kirby-Bauers disc diffusion method.

Results with Conclusions:- Analysis of bacterial flora of the present study showed predominance of Gram Negative Bacilli(80%). Pseudomonas aeruginosa (66%) was the most common organism isolated followed by Staphylococcus aureus(20%), Klebsiella spp.(10%), Proteus spp.(4%). Azithromycin was found to be the most sensitive drug followed by Cefotaxime and Gentamicin.
BP25 Prevalence, species distribution, virulence and antibiotic sensitivity pattern of *Citrobacter*

Chandra Prakash, Lizbeth Maria, Ashwini Hegde

Department of Microbiology, Kasturba Medical College Mangalore

ABSTRACT

**Purpose:** To study the prevalence of *Citrobacter*, to determine the various virulence factors produced by *Citrobacter* and to study drug resistance pattern of *Citrobacter* spp isolated from different clinical specimens.

**Methods:** From February 2012 to February 2013, a total of 51 isolates of *Citrobacter* spp from different clinical specimens were identified to the species level by conventional biochemical tests. The Citrobacter isolates were also studied for the production of virulence factors such as haemolysin, surface hydrophobicity, serum resistance and enzymes. All the isolates were studied for antibiotic susceptibility pattern using modified Kirby Bauer disc diffusion method and ESBL production was screened by standard double disc diffusion method.

**Results:** *Citrobacter* species were most commonly isolated from urine followed by pus and sputum. *C. braakii* was the most commonly isolated species followed by *C.amalonaticus, C. koseri, C. freundii*. Of the 51 isolates 21 isolates were hydrophobic, 15 were serum resistant, 4 produced hemolysin, 11 produced lipase, 5 produced gelatinase, 5 produced amylase. ESBL producing isolates showed multidrug resistance and most of the isolates were found to be resistant to piperacillin and susceptible to cefeparazone sulbactum.

**Conclusion:** The study showed the prevalence of different species of *Citrobacter* and expression of various virulence factors by *Citrobacter* species. It also showed the prevalence of drug resistance in Citrobacter isolates.
BP26 Bacteriological analysis of well water in Mangalore

Shiny D’souza, Sudha J, Gopalakrishna Bhat

Department of Microbiology, KMC, Mangalore, Manipal University

Introduction

Well water may be used for drinking purpose in many parts of India. Well water is susceptible for contamination by pathogenic microorganisms which may be hazardous. The present study was carried out to study the extent of bacterial contamination of well water in different parts of Mangalore.

Materials and Method

A total of 80 samples of well water were collected from different parts of Mangalore. Bacteriological analysis of the water sample was done using multiple tube method and the results were classified as excellent, satisfactory, suspicious and unsatisfactory. Subculture of contaminated water sample was done on MacConkey agar to detect the bacteria responsible for contamination. Identification of bacteria was done using the standard procedures and antibiotic susceptibility test was done to know the drug resistance.

Result

None of the samples were excellent, 29 samples were satisfactory, 19 samples were suspicious, 32 samples were unsatisfactory (Kodakkal, Kulai, Kodical, Ladyhill, Kuloor) results. Among the bacteria isolated, 98 were coliforms, E. coli (31), Klebsiella spp (63), and the rest Pseudomonas spp (58), Enterobacter spp (4), Citrobacter spp (1), Acinetobacter spp (1). Maximum drug resistance was observed with Klebsiella spp (22%). Out of 31 E. coli and 63 Klebsiella spp isolated, 9 (29%) and 16 (25%) respectively were ESBL producers. None of the samples showed the presence of enteric pathogens.

Conclusion

The present study shows that, wells in Mangalore are contaminated and such water is not suitable for human purpose without purification.
BP27 Effectiveness of different disinfectants used in various wards of hospital.

Author: Dr. Vilas B N, Dr. Anuradha K, Dr. Venkatesha D

Introduction: Appropriate disinfection and sterilization procedures are a must for control of hospital-acquired infection. The process of disinfection may be affected by many variables like temperature, contact period, pH and concentration of the disinfectant, bioburden etc. Therefore, the disinfectant ought to be tested in the field for the specified application to ensure its effectiveness.

Objectives: To evaluate the practically achieved disinfection efficacy of various disinfectants used in the hospital.

Material & methods: Different disinfectant samples were collected from various wards at an interval of week for 4 times. Samples were tested by standard “in use test” described by Maurer.

Result: Overall effectiveness of different disinfectants are Hydrogen peroxide (100%), cidex (glutaraldehyde) (100%), formalin (100%), Bleaching powder (50%), Sodium hypochlorite (50%), Dettol (14%).

Efficacy of disinfectants used for needle & syringe discarding -bleaching powder (66.7%), Sodium hypochlorite solution (50%), dialyser & blood set - formalin & hydrogen peroxide (100%), dressing instruments - glutaraldehyde & dettol (100%).

Efficacy at the end of 24 hours bleaching powder (67%), Sodium hypochlorite solution (33%) and dettol (16.67%).

Bleaching powder was 100% effective in medicine, ENT, injection room and casualty but not effective in orthopaedic ward. Sodium hypochlorite which was used in dialysis, injection room was not effective. Formalin and hydrogen peroxide used in dialysis ward, glutaraldehyde and freshly prepared dettol solution in surgical dressing room was 100% effective. Dettol in medicine, MICU, orthopaedic and ENT wards not effective.

Conclusion: It was observed that freshly prepared Dettol was effective. Daily prepared disinfectant with bleaching powder is quite effective and economical.
Background and Objective:

Brucellosis is one of the world's major zoonoses caused by four species of bacteria belonging to the genus brucella. Live stock constitutes the reservoirs. People in villages and small towns live in close contact with domestic animals and consume their products leading to transmission of brucellosis. There are no studies on human brucellosis from Kolar region in Karnataka. We report the seropositivity for brucellosis among high risk groups in the population in and around Kolar and among the patients of PUO at R L Jalappa Hospital, Kolar.

Materials and Methods:

The study included 154 subjects, exposed to risk of brucellosis like veterinarians, farmers, shepherds, butchers and 100 patients with PUO admitted to R L Jalappa Hospital and Research Centre from November 2007 to May 2009.

The sera from subjects and the patients were screened by: Rose Bengal Plate Test (RBPT) and IgG ELISA. Positive sera were further tested by: Standard Tube Agglutination test (SAT), SAT with 2 mercaptoethanol (SAT with 2ME) and IgM ELISA. The absorbance values in ELISA were converted to NovaTechUnits (NTU). The sera showing >11 NTU were considered positive. Serological profile thus obtained was categorized as suggestive of acute, subacute and chronic brucella infection and past brucella infection. Statistical analysis included Odds ratio and Chi square test.

Results:

Among 154 individuals at risk, 15 (9.7%) were seropositive for brucellosis. The seropositivity was 30.76% among veterinarians followed by cattle businessmen (14.28%), butchers (9.67%) and animal owners (3.79%). Ten subjects showing both IgG and IgM antibodies were categorized as possible chronic brucella infection. None of these sera had IgM ELISA NTU values three times that of the IgG ELISA. Five (33.33%) subjects with only IgG ELISA antibodies had previous brucella infection.

Conclusion:

In Kolar region, a high seropositivity was found in people at risk of brucellosis. IgG ELISA was more sensitive than RBPT as screening test. Seropositive subjects fell into two categories: past infections and possible chronic infections based on serological test results and NTU values. Appropriate treatment and follow up reduces risk of brucella infections. Early detection and treatment is essential in both the groups of people to prevent complications of brucellosis.
**BP29** Antibiotic susceptibility profile of *Staphylococcus aureus* from clinical isolates in a tertiary care hospital in Mangalore

**Maya Jose, Uparna, Gopalkrishna Bhat k**

**Department of Microbiology, Kasturba Medical College, Mangalore, Manipal University**

**Background:** Antibiotic resistance is a major problem in hospital acquired *Staphylococcus aureus* infections. The antimicrobial susceptibility profile of local isolates is essential for the selection of appropriate therapy for the management of staphylococcal infections.

**Objective:** The present study was carried out to find out the current status of antibiotic susceptibility pattern among *Staphylococcus aureus* isolated from clinical specimens.

**Methods:** *S.aureus* isolated from the clinical specimens submitted to the Microbiology laboratory of Kasturba Medical College Mangalore from March 2011 to December 2012 were included in the study. Isolation and identification of *S.aureus* was done by standard microbiological techniques. Antibiotic susceptibility testing was performed using Kirby-Bauer disk diffusion method.

**Results:** A total of 983 *S.aureus* strains were isolated. *S.aureus* showed susceptibility to Vancomycin (100%), Netilin (93.79%), Amoxyclav (50.15%), Ciprofloxacin (61.24%), Cotrimoxazole (59.00%), Erythromycin (56.05%), Gentamicin (70.70%), Penicillin (27.97%), Linezolid (94.71%), Teicoplanin (100%), Clindamycin (83.01%). Out of 983 isolates 30.62% isolates were MRSA as detected by Cefoxitin disc method. The highest number of isolates was from Pus 503(51.17 %) followed by Blood 317 (32.24 %). The least were from different body fluids 67 (6.81%) and HVS 96 (9.76%). Among the isolates obtained 5.28 % showed inducible Clindamycin resistance.

**Conclusion:** Antibiotic resistance is a major clinical problem in *S.aureus* isolated from clinical specimens. Early detection of antibiotic resistance will help in proper selection of antibiotics for treatment.
BP30 Antibiotic susceptibility pattern of Enterococcus spp. isolated from post-operative wound infection

Nanditha R Bhat, Shruthi Bhat K S, Dhanashree B

Department of Microbiology, Kasturba Medical College, Manipal University, Mangalore.

Introduction
Enterococci have been reported as the second most common cause of wound infection. Emerging antibiotic resistance like high level aminoglycoside resistance (HLAR), vancomycin resistance is a concern. Steady pandemic spread of drug resistant Enterococcus spp. with acquisition of resistance to newer antimicrobials warrants continued surveillance of these versatile pathogens.

Objectives
The present study was undertaken to know the antimicrobial susceptibility patterns of Enterococcus spp. isolated from pus samples.

Materials and methods
A total of 30 Enterococcus spp. isolated from post-operative wound infection were included in the study. They were identified, characterized and speciated by standard bio-chemical tests. Haemolysin production was detected by using 5% sheep blood agar plate. Antibiotic sensitivity was done by Kirby Bauer’s disc diffusion method as per CLSI guidelines. Minimum Inhibitory Concentration (MIC) of vancomycin was detected by agar screen test.

Result
Among the 30 enterococcal isolates, 18(60%) were identified as E.faecalis, four each (13.3%) were E.faecium, and E.dispar, 2(6.66%) each were E.pseudoavium and E.durans. Eleven E.faecalis (61.1%) and two E.faecium were haemolysin positive. Four (22.2%) isolates of E.faecalis were resistant to High Level Streptomycin (HLS). Eight E. faecalis (44.4%) and one (25%) E.faecium was resistant to High Level Gentamicin (HLG). All the isolates were sensitive to vancomycin by disc diffusion method.

Conclusion
Accurate and effective detection of drug resistance helps in reducing the morbidity and mortality due to multidrug resistant Enterococci in hospitalized patients.
BP31 Nasal carriage status of *Staphylococcus aureus* amongst people working in diagnostic microbiology laboratory of Kasturba Medical College, Mangalore

Rahiyan T A, Mangala, Radhakrishna. M

Department of Microbiology, KMC, Mangalore

**Background:** The incidence of hospital-acquired *S.aureus* infections has been rising with increasing emergence of Methicillin resistant *S.aureus* (MRSA). Hospitals worldwide are concerned by MRSA carriage in their health care workers. The aim of the study was to know the prevalence of nasal carriage of *S.aureus* and MRSA amongst people working in our diagnostic microbiology laboratory.

**Method:** Swabs of both anterior nares of consenting persons were taken with a sterile swab & processed within 2 hours. Swabs were inoculated on Mannitol Salt Agar and incubated at 37° C for 18-24 h. The organisms grown were identified as *S.aureus* by using standard tests. On Mueller-Hinton Agar, the antibiotic susceptibility testing was done by modified Kirby-Bauer method, where as cefoxitin (30μg) disc was used to know the MRSA.

**Result:** A total of 80 healthcare workers with the age range between 20 and 60 years were screened. Out of 80 participants, 25 were nasal carriers of *S.aureus*. Twenty four percentage of the *S.aureus* isolates were found to be inducible Clindamycin resistance.

**Conclusion:** The *S.aureus* carriage amongst people working in diagnostic microbiology laboratory was 31.25% and MRSA was 0%. The existing policy in our laboratory seems to be effective and the same should be maintained.
Antibiotic susceptibility pattern of Enterococcus spp isolated from Urinary tract infection
Shruthi Bhat K S, Nanditha R Bhat, Dhanashree B
Department of Microbiology, Kasturba Medical College, Manipal University, Mangalore.

Introduction
Enterococcus faecalis is one of the most common pathogens in urinary tract infections (UTIs). Emergence of high level aminoglycoside resistance (HLAR), and Vancomycin Resistant Enterococci (VRE), together with resistance to other drugs has led to failure of synergistic effects of combination therapy.

Objectives
The present study was done to know the virulence property of Enterococcus spp and their antimicrobial susceptibility pattern in this region.

Materials and methods
A total of 75 Enterococcus spp isolated from urine samples were included in the study. They were identified, characterized and speciated by standard bio-chemical tests. Haemolysin production was detected by using 5% sheep blood agar. Antibiotic sensitivity was carried out by Kirby Bauer’s disc diffusion test as per CLSI guidelines. Minimum Inhibitory Concentration (MIC) of vancomycin was detected by agar screen test.

Results
Among the 75 enterococcal isolates, 43(57.3%) were identified as E.faecalis, 12(16%) were E.faecium, six (8%) each were E.pseudoavium and E.casseliflavus, five (6.66%) were E.dispar and three (4%) were E.durans. E.faecalis (n=38) and E.faecium (n=10) were haemolysin positive. E.faecalis (n=19) and E.faecium (n=3) were resistant to High Level Streptomycin (HLS). E.faecalis (n=21) and E.faecium (n=6) were resistant to High Level Gentamicin (HLG). Four (9.3%) E.faecalis were vancomycin resistant and rest were sensitive.

Conclusion
The study high lights the early detection of enterococcal UTI and their drug resistance to reduce the morbidity and mortality caused by VRE.
BP33 Methicillin resistant Staphylococcus aureus (MRSA) infections in a tertiary care center: An attempt to expose the lineage of culprit

G Sreejith, Indira Bairy
Melaka Manipal Medical College, Manipal University

Introduction: First case of Methicillin resistant Staphylococcus aureus (MRSA) was reported in 1961. Since then these multidrug resistant hospital associated (HA) MRSA was considered as a major nosocomial pathogen. Emergence of community associated (CA) MRSA strains increased the morbidity associated with MRSA infections. CA-MRSA shows enhanced virulence which is due to production panton valentine leucocidine (PVL). Staphylococcal cassette chromosome mec typing differentiates HA-MRSA from CA-MRSA. The objective of the current study was to characterize clinical isolates of MRSA by Scc mec typing, panton valentine leucocidine assay and antibiotic susceptibility testing.

Materials & Methods: A cross sectional study was conducted at Kasturba hospital, Manipal from November 2010 to March 2011. A total of 82 cases, diagnosed to have MRSA infections were included in the study. Methicillin resistance was determined by 30µg cefoxitin disc. PVL production and scc mec typing was carried out by a PCR based amplification. Antibiotic susceptibility testing was carried out as per CLSI guidelines.

Results: Among the isolates 41.5% of the strains were belonged to either scc mec type IV or V. Gene for PVL production was detected in 73.2% of isolates. Majority of the strains were susceptible to non betalactam drugs (91.5%). A statistically significant association was found between PVL production and CA-MRSA. Association between CA-MRSA and susceptibility to non betalactam drugs were also noticed.

Conclusion: The high incidence of CA-MRSA infections warrants the importance of controlling their spread. This can be achieved by regular screening of inpatients in every hospital. Otherwise these PVL producing highly virulent strains acquire multi drug resistance genes in the hospital environment which challenges the control of the nosocomial infections.
Background: The quality of dental unit water lines (DUWL) is of considerable importance since patients and dental staff are regularly exposed to water and aerosols generated from dental units. The aim of the present study was to determine the quality of water used, presence of biofilms and also the capacity of isolated bacterial species in producing biofilms within DUWL.

Methods: Thirty DUWL samples were collected from various departments of Manipal College of Dental Sciences, Mangalore. Bacteriological analysis was done and isolated organisms were identified. Presence of biofilms on DUWLs and capacity of bacterial isolates to form biofilm were also determined.

Results: Seven of 30 samples (23.3%), were found to be of unsatisfactory quality (coliform count of 1 - >180 MPN/100ml), most frequently from 3 in 1 syringes. Species isolated: *E.coli, Enterobacter spp., Klebsiella spp., Pseudomonas spp. & Acinetobacter spp.* Four of 10 DUWL tubing showed presence of biofilms (40%), formed with *Acinetobacter spp.* & *Pseudomonas spp.* Ten strains displayed ability to form biofilms. Greatest biofilm density was observed with *Enterobacter spp.*

Conclusion: The unique features of dental chair water lines are responsible for rapid development of biofilms on DUWLs, combined with generation of potentially contaminated aerosols. Exposure to water/aerosols containing bacteria (especially nosocomial pathogens with higher intrinsic antimicrobial resistance such as *Pseudomonas & Acinetobacter*) in debilitated patients may lead to life-threatening infections. Therefore it is important to not only maintain a supply of good quality water but also to keep regular quality control checks and regular sterilization/disinfection of dental units.
BP35 PREVALENCE OF ASYMPTOMATIC URINARY TRACT INFECTION AMONG HIV SERO-POSITIVE PATIENTS

Dr Murugesh K, Dr Ravindranath.C, Dr Deepa.S, Dr Amrutha Kumari B, Dr Suma kulkarni, Dr Venkatesha D.

Mysore Medical college & research centre, Mysore

Introduction

HIV remains to be a global pandemic. Individuals infected with HIV have undue predisposition to opportunistic infections and those of urinary tract infections. Locally there is paucity of data concerning the prevalence and pattern of UTI in HIV patients.

Objectives

1. To study the prevalence of asymptomatic bacteriuria and other uropathogens among HIV positive patients.

2. To study the antibiotic susceptibility profile of bacterial isolates.

Materials and Methods

This study was done in 100 HIV patients of which 50 were pre-ART and the remaining 50 were on ART, attending the ART centre. The mid-stream urine samples were collected and processed as per the standard protocol. Antibiotic susceptibility pattern of bacterial isolates was studied.

Results

Urinary tract infection was observed in 37 patients, of which 23 from pre-ART and 14 from ART cases. Among them 15(46.8%) were staphylococcus aureus, 8(25%) were Enterococci, 5(15.6%) were Candida, 2(6.25%) were Escherichia coli, 1(3.125%) case of Acinetobacter spp, 1(3.125%) case of Coagulase negative Staphylococci and 5(15.6%) yielded mixed growth of Candida and bacteria. All bacterial isolates showed multidrug resistance. All candida isolates were non-albicans candida.

Conclusion

Our study demonstrates that UTI is a considerable health problem in HIV patients and MDR pathogens further complicate the situation. The prevalence of UTI was found to be more common among pre-ART patients suggesting the importance of ART and also early screening for UTI in HIV patients.
**BP36 Screening wood rotting fungi for Anti-MRSA compounds.**

**Kishor Kumar Keeka, Sunil Rao Padmaraj**

Department of Microbiology, Yenepoya Medical College, Yenepoya University, University Road, Deralakatte, Mangalore - 575 018. Karnataka. INDIA.

**Introduction:**

With an increasing number of bacteria developing resistance to commercial antibiotics, extracts and derivatives from mushrooms can be tested for promising novel antimicrobials. Microscopic fungi (Molds) are explored and found to be a well known source of antimicrobials, however macroscopic fungi (mushrooms, puffballs, gill fungi) are least utilized for antimicrobials against most pathogens. The present work was undertaken to screen locally available wood rotting mushrooms for their antimicrobial property against Methicillin resistant *Staphylococcus aureus* (MRSA).

**Materials and Methods**

Fruiting bodies of the wood rotting fungi were collected from the cut tree stumps and wooden logs. Fruiting bodies were cut into small discs, placed on a Mueller Hinton Agar media previously seeded with MRSA isolate. The presence of antimicrobials in the given sample was evaluated based on the zone of inhibition around the disk. Disc’s (Fruiting bodies) showing the zone of inhibition was extracted using different solvents to isolate chemical constituents and further tested using well diffusion assay. The results were expressed as zone of inhibition in millimeter. Chemicals constituents of the solvent extracts were separated using thin layer chromatography (TLC). One set of TLC plate was subjected to Bioautography so as to find out the specific chemical constituent/s responsible for the activity.

**Results:**

Of the Nine fungi tested, F. No: 1 and 9 was found to have anti MRSA activity. It is observed that all the extracts contained anti-MRSA activity. However Acetone extract has the highest anti MRSA activity followed by Ether and Ethyl acetate, with minimum activity in Methanol extract. Zone of inhibition was recorded in millimeters. TLC separated chemicals constituents using different mobile phases as distinct bands. A band with rf 0.68 was found to have strong anti MRSA activity. The same band was seen in all the extracts when separated in TLC.

**Conclusion:**

Two of the tested fungi were found to contain strong anti MRSA principle. It is clear from the studies that chemical constituents of the fruiting bodies or secretion of secondary metabolites of macroscopic fungi can be explored for antimicrobials against Drug resistant pathogens.
BP37 ISOLATION AND IDENTIFICATION OF BACTERIAL PATHOGENS FROM BLOOD STREAM INFECTIONS AND ROLE OF MULTI DRUG RESISTANT BACTERIAL ISOLATES IN BLOOD STREAM INFECTIONS.

Vishwajeet Bardoloi, Yogeesha Babu KV, KG Basavarajappa, VL Jayasimha, CS Vinod Kumar, KG Raghu Kumar, Kruthika P.

Department of Microbiology, S.S. Institute of Medical Sciences, Davangere.

Introduction: Bloodstream infections with increased mortality and morbidity often with multidrug resistant (MDR) bacteria are common in tertiary care hospitals with a clinical spectrum ranging from self limiting infections to fatal sepsis. Limited data on incidence and MDR pathogens from bloodstream infections necessitated the present study. Reviewing microbiological culture-sensitivity records, we aim to determine the incidence of bloodstream infections by bacterial pathogens, distribution of bacterial pathogens and MDR bacteria from different areas of the hospital and role of MDR bacteria in blood stream infections.

Materials and methods: Institutional based cross sectional retrospective study of records of all blood samples sent to the laboratory for blood cultures over a period of six months. Isolation, identification and interpretation of blood culture were done according to standard guidelines. An MDR organism is one meeting the European Society of Clinical Microbiology and Infectious Diseases guidelines.

Results: Incidence of culture positives was 152 out of 826 (18.40%) which included 72 MDR bacteria. Predominant isolates were Pseudomonas (39/109) and Klebsiella (14/43) from Intensive Care Units (ICUs) and wards respectively. Paediatric ICU yielded highest culture positivity 32.35% (33/102), ($\chi^2$=15.02, P=0.005,S). Slightly higher incidence of culture positives and MDR bacteria was observed in ICUs than in wards (18.2%,47.7% vs 19.5%, 46.51%;P=0.65,0.89,NS). Multi drug resistance was highest in E.coli (71.42%, P=0.04,S). Mortality and morbidity could not be determined.

Conclusions: Study highlights burden of bloodstream infections and MDR pathogens from different areas of the hospital. However, a systematic prospective study is required to determine role of MDR organisms in terms of mortality and morbidity from bloodstream infections.