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### A MICROBIOLOGICAL STUDY OF DIABETIC FOOT ULCERS IN CHENNAI PORT TRUST HOSPITAL

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Worldwide, diabetic foot lesions are a major medical problem, which leads to hospitalization. If the infected foot is not treated properly, it may lead to amputation.

**Aims & Objectives:** 1. To determine the microbiological profile of diabetic foot ulcers.

2. To assess the antibiotic susceptibility pattern of the organisms isolated.

3. To identify the prevalence of multidrug resistance, methicillin resistant staphylococcus aureus (MRSA) and extended spectrum Beta lactamase (ESBL) producers among the isolates.

**Material & Methods:** Pus samples for bacterial culture were collected from 74 patients admitted with diabetic foot infections during a period of one year. The pathogens were identified and MIC was determined by automation. Multidrug resistance and MRSA strains were identified.

Screening for ESBL production was confirmed by double disc diffusion method.

**Results:** Gram negative aerobes were most frequently isolated (51.35%) followed by gram positive aerobes (48.65%) ESBL production and methicillin resistance was noted in 68.42% and 46.15% of the bacterial isolates. All the ESBL producers were sensitive to carbapenem. Multidrug resistances was seen among 51.35% of the total isolates.

**Conclusions:** The prevalence of ESBL producers, MRSA and multidrug resistant isolates constitute a serious threat to the antibiotic therapy, leading to treatment failure, resulting in surgical treatment and increase in cost. There is a need for continuous surveillance of resistant bacteria to provide the basis of empirical therapy and reduce the risk of complications and mortality.

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### PRONOUNCED ANTIBACTERIAL ACTIVITY OF DIFFERENT EXTRACTS OF FRUITS OF ACACIA AURICULIFORMIS

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**Aims & Objectives:** *Acacia auriculiformis* is widely cultivated in many countries including India for its use as fuel. The plant is reported to have central nervous system depressant activity. The acylated triterpenoid bisglycosides isolated from the funicles of *A. auriculiformis* has shown anthelmintic property.

This study describes antibacterial potentiality of various extracts made from the funicles of *A. auriculiformis*.

**Methods:** Powdered seedpods of *A. auriculiformis* were extracted with methanol at room temperature for 7 days, solvents evaporated to dryness in vacuo (methanol extract), a part of the residue was suspended in water (water extract). A portion from this was then extracted with ethyl acetate to obtain ethyl acetate extract. A part of the aqueous extract was subjected with butanol, solvents evaporated to obtain butanol soluble residue. All the different extracts were tested for antimicrobial action against 30 internationally known (ATCC, NCTC) strains of bacteria following CLSI guidelines.

**Result:** It was found that strains of *Bacillus* spp., *Staphylococcus aureus*, *Vibrio cholerae* and shigellae possessed significant sensitivity towards all the extracts. However, the methyl alcohol and butyl alcohol extracts were more potent than the others. Strains of *E. coli*, *Salmonella* spp., *Klebsiella* spp. and *Pseudomonas* spp. were much less sensitive towards any of the above extracts.

**Conclusion:** Naturally occurring products from plants have played a major role in the discovery of active therapeutic agents since ancient times. Biologically active substances are expected to be obtained from these extracts. Studies are in progress for elaborate *in vitro* and *in vivo* experiments with the active components from these extracts.

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### "CHARACTERIZATION AND ANTI- BIOTIC SUSCEPTIBILITY PATTERN OF NONFERMENTERS"

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**Aims and Objective:** To identify and characterise nonfermentative gram negative bacilli isolated from various clinical samples and to study the antibiotic susceptibility pattern of clinical isolates

**Material and Methods:** The present study was undertaken at the Department of Microbiology, J.N Medical college, Belgaum during the period from 01/01/2007 to 01/01/2008. A total of 130 nonfermenters isolated from various clinical samples were included in the study. All these were identified by a battery of tests as per standard laboratory techniques. Antimicrobial sensitivity testing was performed on the 130 isolates by Kirby bauer disc diffusion method on Mueller Hinton Agar plate using standard antimicrobial agents.

**Results:** Out of 130 isolates, 107(82.3%) *Pseudomonas aeruginosa*, 20(15.4%) *Acinetobacter baumannii*, 1(0.76%) each of *A.lwoffii*, *B.pseudomallei* and *Moraxella* were isolated. The majority of the isolates were isolated from pus/woundsite swab(78) followed by blood (30), urine(11), sputum(6) and 2 each from catheter tip and ear swab. Out of 107 isolates of *P.aeruginosa* 96.2% were sensitive to Meropenem, 50% to Ciprofloxacin, 49.5% to Amikacin. *A.baumannii* isolates were more sensitive to Meropenem(96.2%) followed by Ciprofloxacin (45%), Doxycycline (35%) and Amikacin(25%).