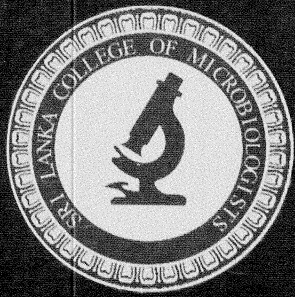


The Bulletin of the



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Scientific Programme

"Combating Sepsis"

Pre-congress

*The 2nd South Asian
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and stents (9%), and recent surgery (8%). Twenty percent (20%) had multiple associated factors. Type specific risk factors such as renal calculi (3%), chronic pulmonary diseases (3%) and shunts and extra-ventricular drains (3%) were also recorded.

Treatment of 55 cases was guided by positive aerobic cultures such as pus (21), and blood (18). There were respiratory samples with significant isolates from 9 lung abscesses and positive urine cultures from 7 renal abscesses. Most frequent isolates from all samples were *Klebsiella* species (18/55, 33%) followed by *Escherichia coli* (14/55, 25%) and *Staphylococcus aureus* (9/55, 16%). Fifty six percent (56%) of coliforms were extended spectrum beta lactamase producers while 45% of *S. aureus* were methicillin resistant. There were pathogens like *Burkholderia pseudomallei* (7 of lung and liver abscesses) and *Chromobacterium violaceum* (1 liver abscess).

Most frequently used antibiotics in treatment were carbapenems (55%), broad spectrum penicillins (23%) 3rd generation cephalosporines (22%) and glycopeptides (16%).

Conclusions

There is a male predominance in deep seated abscesses and the middle aged and elderly are the mostly affected. Diabetes is the main associated comorbidity. Treatment should be guided by the cultures of relevant samples due to the antibiotic resistance and emergence of rare pathogens.

PP 5

Neonatal sepsis following maternal carriage of *Streptococcus pneumoniae*

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Introduction

Streptococcus pneumoniae can be present in the respiratory tracts of about 50% of normal population. It is not a common organism to colonize the female vagina but when present, it can lead to early onset neonatal sepsis with severe morbidity and mortality.

Case report

One day old baby boy transferred from a peripheral hospital to the Special Care Baby Unit (SCBU) of a tertiary care hospital due to respiratory distress following preterm normal vaginal delivery at 32 weeks. This delivery was not associated with prolonged rupture of membranes or history of maternal fever. After birth, baby became tachypnoeic, had poor sucking and remained inactive.

After admitting to the SCBU, IV penicillin and IV gentamicin were started after septic screening. Patient was ventilated and on the second day antibiotics were changed to IV vancomycin and IV meropenem.

Baby's total white cell count was $7.8 \times 10^9/L$ and C-reactive protein was 96mg/L. Chest X-ray revealed right upper zone consolidation. Blood culture became positive for a highly mucoid *Streptococcus pneumoniae* after seven hours of incubation. Patients' deep ear swab culture and the later requested maternal high vaginal swab culture yielded similar mucoid pneumococci. All 3 isolates had the same antibiotic sensitivity pattern with sensitivity to penicillin, cefotaxime, erythromycin, clindamycin and vancomycin.

Patient had expired by the time blood culture became positive.

Discussion

Neonatal sepsis due to *Streptococcus pneumoniae* acquired from maternal birth canal is rare and only very few proven cases are reported worldwide.

This case was confirmed because not only the blood culture but also the deep ear swab of the neonate became positive for the same organism with the same antibiotic sensitivity pattern which was similar to that isolated from the maternal high vaginal swab. Prematurity being a risk factor could have worsened the condition. The organism could have been highly virulent due to its mucoid nature showing capsular formation. Though it is very rare to have maternal carriage of *Streptococcus pneumoniae*, if found in the ante-natal screening, it should be considered in possible neonatal sepsis for adequate empirical treatment.

PP 6

In-vitro evaluation of antimicrobial effects of Sri Lankan bee honey against microorganisms causing chronic wounds – A preliminary study

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Introduction

Bee honey is an ancient remedy for natural healing of chronic wounds, especially in indigenous medical treatment. But these practices have not been properly evaluated and documented in Sri Lankan literature. In this preliminary study we are evaluating the effectiveness of different preparations of bee honey from different parts of the country as an alternative antimicrobial agent for organisms causing chronic wounds.

Objective

To evaluate the in-vitro efficacy of Sri Lankan bee honey as an antimicrobial agent against pathogens causing chronic wounds.

Methods

Standard strains of 4 bacterial and 4 fungal species and 14 bacterial isolates from chronic wounds (including MRSA, ESBL, MDR *Acinetobacter*, and MDR *Pseudomonas*) were tested against twelve honey types belonging to seven Agro Ecological Regions (AERs) of Sri Lanka. Antibacterial activity was determined by agar well diffusion, phenol equivalent methods and MIC by agar dilution given as % (w/vol).

Results

6/12, 5/12, 11/12 and 11/12 honeys gave inhibitory zone diameters ranging 12.5-19.5 mm for *Staphylococcus aureus* (ATCC-25923), *Escherichia coli* (ATCC-25922), *Pseudomonas aeruginosa* (ATCC-27853) and *Klebsiella pneumoniae* (ATCC-700603) respectively.

Depending on results of standard strains, six honey samples were chosen for further testing. Four out of these originated from the lower country indicating higher efficacy compared to other regions.

Out of six selected honeys, four types gave therapeutic level activity for all tested clinical isolates except for *Pseudomonas aeruginosa*.

MIC of 10-20% (w/v) was reported for all ATCC strains. Honey originated from low country regions showed superior activity against multidrug resistant bacteria. Commercially available honey reported lowest antibacterial activity.

No inhibitory zones were observed for fungal species (*C. albicans* ATCC10231, *C. glabrata* ATCC90030, *C. parapsilosis* ATCC13803, *C. tropicalis* ATCC13803) and MIC was >40% (w/v) for all types of honey.

Conclusions

Sri Lankan bee honey exhibits significant antibacterial activity against both Gram positive and negative bacteria including multidrug resistant organisms in-vitro. This finding needs to be confirmed by further large scale studies.

Antibacterial potency varies in different types of honey from different AERs. Low country honey was superior to others while antibacterial activity of commercially available honey was negligible.

None of the honeys had antifungal activity against *Candida* species.

PP 7

Extended-spectrum beta-lactamase (ESBL)-producing *Escherichia coli* and *Klebsiella* species causing urinary tract infection (UTI) in children

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Introduction

ESBL-producing *Escherichia coli* and *Klebsiella* species causing UTI among children is an increasing problem worldwide.

Objective

To determine ESBL production among uropathogenic *Escherichia coli* and *Klebsiella* spp. in children and evaluate current antibiotic resistance patterns.

Method

This retrospective study was carried out in a district general hospital in Sri Lanka from January to December 2016. Total of 1904 urinary specimens from children (<13years) with suspected UTI were processed for isolation of bacterial pathogens and to determine their antimicrobial susceptibility. Standard isolation and identification procedures were carried out using the Laboratory Manual in Microbiology. UTI chromogenic agar was used for identification. Antibiotic susceptibility testing was done by Stokes disk diffusion method. Isolates were screened for ESBL production using double-disk diffusion method and confirmed by combination disk diffusion test.

Results

Of 124 positive isolates, 107 (84%) were coliforms. *Escherichia coli* n=71 (66%) was the predominant isolate followed by *Klebsiella* spp. n=21(20%) and *Proteus* spp. n=15 (14%). ESBL production rate in *Klebsiella* spp. 7/21 (33%) was higher than in *E. coli* 20/71 (28%). ESBL-producing *E.coli* were more common among females whereas ESBL producing *Klebsiella* spp. were higher in males.

Age group 1-5 years had the highest number of coliform positive UTIs (n47). Children with ESBL-positive *Klebsiella* spp. had clinical histories of recurrent UTIs and were frequently on cephalixin prophylaxis.

ESBL-positive *E.coli* and *Klebsiella* spp. showed similar susceptibility to amikacin, meropenem and nitrofurantoin (100%). ESBL-producing *E.coli* showed greater resistance compared to *Klebsiella* spp. for gentamicin and ciprofloxacin/norfloxacin (77% and 25%, and 77% and 50% respectively). Non-ESBL-producing *E. coli* showed 90% sensitivity to co-amoxiclav and cefuroxime