Abstract : Para Clinical Sciences

Microbiological Profile of Ventilator Associated Pneumonia and their Antibiogram at Tertiary Care Hospital Attached to SP Medical College, Bikaner

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INTRODUCTION

Ventilator associated pneumonia (VAP) refers to pneumonia developing in mechanically ventilated patients for more than 48 hours after tracheal intubation or tracheostomy. The aim of the study was to find out organisms associated with VAP and their antimicrobial susceptibility pattern.

METHODS

A prospective study was performed on 100 patients undergoing mechanical ventilation (MV) for > 48 hours. Endotracheal aspirates (ETA) were collected from patients with suspected VAP cases and quantitative cultures were performed on all samples.

RESULTS

Results showed significant growth ($>10^5$ cfu/ml) for pathogenic organisms causing VAP in 88 (88%) patients. Patients of the age group of 0 - 15 years were more prone to develop VAP. 14 cases were found to be polymicrobial and 74 were of monomicrobial. 44.32% of cases were of early onset VAP and 55.68 % were of late onset VAP. *Acinetobacter spp.* was found to be the commonest 35.29% organism followed by *Pseudomonas aeruginosa* and *Klebsiella pneumoniae* 23.53% and 20.59%, respectively. Out of 79 GNB, 79.74% isolates were found to be MDR, including 10 isolates of MDR *Pseudomonas*.

CONCLUSION

The knowledge of prevalent local pathogens and their antibiogram will help the clinician to choose the appropriate antimicrobial agent for effective and rationale treatment.

Identification of ESBL Producing GNB Strains from various Clinical Samples at Tertiary Care Hospital in Jhalawar

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INTRODUCTION

Increasing rate of resistance to commonly used antibiotics is an alarming sign for future of healthcare sector. This study was conducted to detect prevalence of ESBL producing Gram negative bacilli (GNBs) and their antibiogram.

METHODS

A total of 250 gram negative bacilli isolates were studied. The isolates were identified and confirmed using standard microbiological methods and biochemical reaction and antibiotic sensitivity testing was performed according to guidelines established by CLSI. The isolates were screened for ESBL production by resistance to third generation Cephalosporins by disc diffusion test and were confirmed by double disc synergy test (DDST) comprising CTX/CAZ/AMC and by phenotypic confirmatory double disc diffusion (PCDDT) test with CAZ/CAC.

RESULTS

Majority of isolated organisms were *E coli* (39.6%). Screening method detected 96.4% ESBL production in 250 isolates which were further confirmed by DDST as 49.6% and PCDDT as 59.6%. Maximum ESBL production was seen from blood (75.0%) samples with significant association ($p<0.05$) followed by pus and urine.

CONCLUSION

Extended spectrum beta lactamases are gradually increasing with coresistance to some other classes of antibiotics which is very alarming.

Bacteriological Profile of Endotracheal Tube Aspirates in Mechanically Ventilated Patients and Antibiotic Susceptibility Pattern in Government Medical College and Associated Hospitals in Kota

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INTRODUCTION

Eighty-six percent of nosocomial pneumonias are associated with mechanical ventilation. The aim of present study was to assess the spectrum of aerobic bacteria in endotracheal aspirates of patients on ventilator and evaluate the antibiotic sensitivity pattern in the isolates and detection of extended spectrum beta lactamase (ESBL) production in *Escherichia coli* and *Klebsiella* species and correlate the clinical findings with the bacterial isolates as a probable cause of ventilator associated pneumonia (VAP).

METHODS

Endotracheal aspirates were taken from 100 patients who were mechanically ventilated for more than 48 hours and were subjected to culture and antibiotic susceptibility.

RESULTS

27 patients were culture positive (30 isolates) and diagnosed as VAP. *Klebsiella pneumoniae* was most frequent isolate (10 isolates), other isolates were *Pseudomonas aeruginosa* (7 isolates), *Acinetobacter spp* (6 isolates), *Staph aureus* (5 isolates) and *Escherichia coli* (2 isolates). Colistin and Imipenam were found the most effective against gram negative isolates. 100% *Staphylococcus aureus* isolates were sensitive to Vancomycin, Linezolid, and Clindamycin. 80% were Cefoxitin resistant.

CONCLUSION

The need for active surveillance for VAP in all ICU setups is increasing, and prompt and early diagnosis of pneumonias would however be the mainstay in bringing down mortality.

Antimicrobial Susceptibility Pattern of *Enterococcus* Species Isolated from Urine Samples from a Tertiary Care Hospital

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INTRODUCTION

Multi drug resistant *Enterococcus* species have emerged as very important opportunistic nosocomial pathogens causing UTIs. The aim of this study was to determine the antimicrobial susceptibility pattern of different enterococcal species isolated from urine samples.

METHODS

A total of 105 enterococcal isolates from urine samples were included and processed and speciation was done according to Facklams conventional method. Antibacterial susceptibility pattern was determined by Kirby Bauer disc diffusion method with recommended antimicrobial agents according to CLSI 2018.

RESULTS

Among 105 isolates, *Enterococci* were isolated more from in-patients (76.19%). *E faecium* was predominant species (71, 67.62%) over *E faecalis* (34, 32.38%). There was alarmingly high resistance to commonly used antimicrobial agents including quinolones (88% -93%), Ampicillin (71.4%) and high-level Gentamycin (62.8%). However, resistance to Vancomycin (17.14%) and linezolid (6.6%) was found to be low. Resistance to high level Gentamycin, Doxycyclin and Fosfomycin was found to be significantly higher in IPD isolates as compared to OPD isolates ($p < 0.05$). *E faecium* was found to be more resistant to Ampicillin, Nitrofurantoin, Levofloxacin, Fosfomycin, and Norfloxacin than *E faecalis* ($p < 0.05$).

CONCLUSION

There is a need to carry-out regular surveillance of antimicrobial resistance of enterococci to recommend appropriate therapy.

A Cross-Sectional Study to Assess the Effect of Epidemiological Determinants on Prevalence of Anaemia among the Adolescent and Reproductive Age Females Residing at Rural Bikaner

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INTRODUCTION

In India, 20-40% of maternal deaths are due to anaemia. The aim of present study was to study association between epidemiological determinants and anaemia prevalence among 10-49 year age group females of rural Bikaner.

METHODS

This was a community based cross-sectional study conducted among 600 women. The study participants were selected by systematic random sampling. The inclusion criteria considered were informed verbal consent and no critical or chronic illness.

RESULTS

Most (92.50%) of the study population was anaemic. Mean haemoglobin value among anaemic and non-anaemic females was 8.65 ± 1.23 g/dl and 11.24 ± 1.21 g/dl, respectively. About 2/3rd (69.55%) of the anaemic study population had moderate anaemia. Only 2.50 % of the anaemic study population had severe anaemia.

CONCLUSION

Anaemia is a major public health problem among adolescent and reproductive age females in rural area. Age groups, type of family, age at marriage, age at first child, pattern of menstrual cycle, medical history of study population, and signs and symptoms were associated with anaemia in adolescent and reproductive age females.

Serodiagnosis of Scrub Typhus in Tertiary Care Hospital in Southern Rajasthan

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INTRODUCTION

Rickettsial infections are being increasingly recognized as a cause of acute febrile illness and should be considered as a distinct possibility in patient presenting with suggestive clinical feature. Scrub typhus is a zoonotic disease and is one of the most covert emerging and re-emerging rickettsial infection. Aim of present study was to diagnose seropositivity of scrub typhus in clinically suspected cases, percentage in male and female and geographical distribution of scrub typhus.

METHODS

This study was conducted on serum samples from clinically suspected cases, collected over a period of two years for detection of IgM antibody by ELISA test.

RESULTS

Out of 1915 samples tested, 633 (33.05%) were positive for scrub typhus IgM ELISA test. From these 633 positive samples, 222 (35%) were males and 411 (65%) were female patients. Most of the positive cases were from the rural, tribal, and peripheral agricultural areas of this region.

CONCLUSION

There is an increase in seropositivity of scrub typhus. Therefore, it should be included in the differential diagnosis of pyrexia of unknown origin (PUO) alongwith dengue and malaria which are other common endemic infection in this part of country. Treatment should be initiated early to reduce morbidity and mortality.

Detection of Dengue and Chikungunya Virus by Multiplex Real Time-Polymerase Chain Reaction at SMS Medical College, Jaipur

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INTRODUCTION

Dengue and Chikungunya are both transmitted by mosquito and are major public health concern throughout world. The objective of this study was to determine the magnitude and co-infection of Dengue and Chikungunya virus in patients presenting with dengue like illness (DLI) and role of multiplex PCR in detection.

METHODS

A total of 1860 blood samples of patients having DLI were collected and processed for Dengue and Chikungunya IgM ELISA, Dengue NS1 ELISA, Dengue and Chikungunya RT-PCR during the period of April 2017 to March 2018.

RESULTS

Out of total samples, 657 (35.32%) were positive for Dengue and 455 (24.46%) for Chikungunya. Out of 657 samples, 51% were positive for DENV IgM, 56% for NS1 antigen, and 35.77% samples for DENV RNA by RT-PCR. In case of Chikungunya, CHIKV IgM was positive in 97.58% of 455 samples and CHIKV RNA in only 3.3% samples. Monoinfection of DENV was detected in 524 (28.17%) samples and CHIKV in 322 samples (17.31%). The co-infection of DENV and CHIKV in 133 (7.15%) samples. Highest number of Dengue and Chikungunya cases was recorded in October followed by November.

CONCLUSION

Both DENV and CHIKV viruses should be considered in patients presenting with DLI. Chances for Dengue and Chikungunya detection can be increased by using all the methods IgM, NS1ag and PCR, and multiplex PCR.

Assessment of Quality of Services Provided through Primary Health Centres in Southern Rajasthan under National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular disease and Stroke (NPCDCS)

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INTRODUCTION

Non-communicable Diseases (NCD) cause 61% deaths in India annually. Primary Health Centre (PHC) plays a key role in the delivery of prevention and care interventions. This study was aimed to assess the quality of services provided for NCDs at PHC and identify obstacles.

METHODS

This was a cross sectional descriptive study at six blocks 50% in Udaipur district, selected by lottery method, where all PHCs (49) were assessed for readiness, knowledge, attitude, practice (KAP) and skills of medical officers (MOs) and ANMs on self-administered semi-structured questionnaires and standard checklists. Patient satisfaction recorded on Likert's 5 point scale.

RESULTS

Readiness of PHC was least in trained manpower (6.2%), documentation (42.9%), and functioning equipments (31%). Subjects scored highest for knowledge (mean 14.06 ± 3.63) and least for skills (mean 5.91 ± 2.62). Overall MOs scored better than ANMs (p value < 0.001). Only 24% MOs and 10% ANMs counselled family members of patients. Main barriers perceived were poor patient compliance (93%) and heavy work load (88%). Majority (53%) of the patients were highly satisfied mostly because of free availability of medicines (87%).

CONCLUSION

Obstacles like suboptimal readiness of the PHC, untrained manpower with suboptimal practice and skills, and poor patient compliance need strengthening for quality services.

Study of Platelet Parameters in Vascular Complications of Type 2 Diabetes Mellitus

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INTRODUCTION

The aim of the present study was to compare platelet parameters in type 2 DM patients alongwith their correlation with glycated haemoglobin (HbA1c) and extent of complications in DM.

METHODS

The present study was carried out on a total of 100 cases, [diabetic (n=70) and non diabetic (n=30)] who attended endocrine OPD and thereafter platelet indices were carried out by CBC analyser in haematology section.

RESULTS

Out of 70 diabetic cases, 78.6% were having associated complications and 21.4% patients were without complications. Most of the patients had retinopathy (29.1%) and nephropathy (29.1%), 25.4% patients had coronary artery disease and peripheral vascular disease, while only 16.4% had neuropathy. The statistical analysis showed statistical significant correlation of PDW ($p = 0.0001$) and platelet ($p = 0.0042$) between non-diabetic and diabetic with complication, showed a statistically significant rise irrespective of type of complications. MPV shows statistically significant rise among non diabetic and diabetic with ($p = 0.0001$) and without complication ($p = 0.0181$).

CONCLUSION

MPV and PDW can be a useful as prognostic marker of vascular complication in diabetes. Thus, MPV and PDW might be used as a simple and cost effective laboratory test in the follow up of DM alongwith HbA1c and thereby help to reduce the morbidity and mortality.

Assessment of Nutritional Status and Factors Associated with Malnutrition among All Children Attending the Anganwadi's of RHTC Srinagar, Ajmer

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INTRODUCTION

Under-nutrition among 0 to 6 year children remains major public health problem in India. The aim of present study was to assess nutritional status and factors associated with malnutrition among all children attending the anganwadi centre.

METHODS

A cross sectional study was carried out at anganwadi centre of RHTC Srinagar, Ajmer. Non-probability convenient sampling technique was used. The pre-designed tool was employed for collecting the data for various parameters. The data was collected by doing physical examination of each child during the visit at anganwadi. At the end of data collection, total 424 children were enrolled. The data were analyzed using the SPSS software (version 20).

RESULTS

The prevalence of underweight, stunting and wasting was according to WHO growth-standard (2006). Out of total 424 children, prevalence of under weight, stunting, and wasting was 36.55%, 29.24%, and 19.33% respectively. According to malnutrition status, 39.62% children were normally-nourished while 60.38% children were malnourished and had one or more form of malnutrition.

CONCLUSION

Higher prevalence was observed for underweight and stunting. Various causes apart from socio economic status need to be addressed to reduce prevalence of stunting and underweight.

An Epidemiological Study of Ocular Morbidity in School Going Children (6-15 Years Age Group) in Rural Area of Udaipur District, Rajasthan

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INTRODUCTION

Ocular morbidities in school going children (6-15 years age group) affect their learning abilities, educational performance and development. This warrants their early detection and treatment to prevent future blindness. This study aimed to assess the prevalence of ocular morbidity and their association with BMI, duration of TV watching and gadgets use; electric supply and type of light used at student's home.

METHODS

A cross sectional study was conducted in village Medta of Udaipur district on a total of 600 subjects.

RESULTS

This study revealed that the prevalence of ocular morbidity in school going children in rural area of Udaipur was 23.6%. Among total students, 19.16% had refractive error, 6.1% students had conjunctivitis, 5.5% students had eye strain, 5.3% students had xerophthalmia, 3.3% students had trachoma, 2.4% of them had eye lid infections, 2.2% had bitot's spots, and some cases were of ptosis and nyctalopia. Refractory error was significantly associated with nutritional status and duration of TV watching and gadgets' use.

CONCLUSION

The prevalence of refractive error was higher in children having their BMI below normal range and whose TV watching and gadgets use duration was more than 2 hours per day.

Comparative Evaluation of the Efficacy and Safety of Imipramine, Sertraline, and Escitalopram in Patients of Depression in a Tertiary Care Hospital

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INTRODUCTION

Lack of comparative studies between the efficacy of conventional first generation TCA imipramine and new antidepressants like sertraline and escitalopram and paucity of data in Indian scenario has prompted us to take up this study to compare not only their efficacy and safety but also their effects on various cardiac, liver, renal, and metabolic parameters in the patients of moderate depression..

METHODS

This open label, prospective, and observational study was conducted in 810 newly diagnosed patients as per DSM-5 criteria who were divided into three groups of 270 patients each and treated with imipramine (Group I), sertraline (Group II), and escitalopram (Group III) respectively after a through baseline evaluation. A regular follow up at the interval of 4 weeks was carried out till the end point, i.e. 12 weeks.

RESULTS

A statistically significant decline in mean BDI score was noted in all three groups. Reduction was maximum in group III and minimum in group I. A significant increase was observed in lipid profile in all groups after 12 weeks of treatment. The extent of increase for HDL was found maximum in Group III whereas for LDL it was maximum in group I. FBS and PPS were significantly increasedin group I but they were significantly reduced in group II and III. Serum bilirubin was increased significantly in group II and group III. Most side effects were observed in imipramine group and least in escitalopram group.

CONCLUSION

Ecsitalopram was found more efficacious and safe in comparison to sertraline and imipramine.