PP-002 **Comparison of in vitro efficacy of linezolid and vancomycin against methicillin resistant *Staphylococcus aureus* (MRSA)**

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Background: *Staphylococcus aureus* is a facultatively anaerobic, Gram-positive coccus. It is a major pathogen associated with serious community and hospital-acquired infections. By designation methicillin resistant *Staphylococcus aureus* (MRSA) is a strain of *Staphylococcus aureus* that is resistant to all beta-lactams, including penicillins, cephalosporins and carbapenems.
Vancomycin has a narrow spectrum of activity, restricted to most Gram-positive bacteria, and is the drug of choice for the treatment of methicillin resistant *Staphylococcus aureus*. This agent, however, requires intravenous administration, and occasionally patients experience unacceptable side effects. Linezolid, a member of the new **oxazolidinone** class of antibiotics, has shown very good activity against methicillin resistant *Staphylococcus aureus*, has excellent oral bioavailability and is inexpensive as compared to vancomycin.
Aims and Objectives: Comparison of in vitro activities of vancomycin and linezolid against methicillin resistant *Staphylococcus aureus*.
Materials and Method: The study was conducted over a period of 6 months. Fifty Methicillin resistant *Staphylococcus aureus* isolated from the clinical isolates of Military hospital Rawalpindi were subjected to the determination of Minimum inhibitory concentrations of linezolid and vancomycin using E-strips. Minimum inhibitory concentrations 50 and minimum inhibitory concentrations 90 were calculated.
Results: All the isolated organisms were uniformly susceptible to both the antibiotics. Vancomycin showed higher minimum inhibitory concentrations (MICs) as compared to linezolid MICs.
Conclusion: This study suggests that linezolid and vancomycin have similar in vitro efficacy for methicillin resistant *Staphylococcus aureus* infections. Linezolid's oral dosing option can allow earlier discharge of hospitalized patients and its low cost reduces health care expenses.

PP-003 **Determination of vancomycin minimum inhibitory concentrations against methicillin resistant *Staphylococcus aureus* to find out its efficacy in our set up**

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Introduction: Methicillin resistant *Staphylococcus aureus* (MRSA) is a strain of *Staphylococcus aureus* that is resistant to all beta-lactams, including the penicillins, cephalosporins and carbapenams. It is implicated in serious hospital and community acquired infections.
Vancomycin is the drug of choice for the treatment of MRSA. The rapid emergence of resistance against Vancomycin in world necessitated the study to be done in our set up to find out emergence of Vancomycin intermediate and resistant MRSA.
Objective: The objective of this study was to monitor the current status of Vancomycin susceptibility for the presence of vancomycin resistant or intermediate strains of *Staphylococcus aureus* in our set up.
Materials and Methods: This descriptive cross sectional study was carried out over a period of one year. Clinical specimens sent for culture and sensitivity to our department were inoculated on appropriate culture media and incubated to get growth of bacteria. *Staphylococcus aureus* were identified by recommended methods. Methicillin resistance was tested by modified Kirby-Bauer disk diffusion technique and minimum inhibitory concentrations (MIC) for vancomycin were detected by the use of E-strips. MIC_{50} and MIC_{90} were calculated.
Results: Most of MRSA were isolated from Pus followed by nasobronchial lavage samples. All MRSA were sensitive to Vancomycin but majority strains showed higher MICs almost reaching break point. One isolate was found to be heterogeneous GISA (Glycopepetide intermediate *Staphylococcus aureus*).
Conclusion: There is emergence of reduced susceptibility of vancomycin against MRSA. Alternatives for treatment of MRSA should be considered and indiscriminate use of Vancomycin should be avoided to decrease the chances of vancomycin intermediate and vancomycin resistant *Staphylococcus aureus* strains emergence.

PP-004 **Comparison of in vitro efficacy of linezolid, tigecycline and chloramphenicol against methicillin resistant *Staphylococcus aureus* (MRSA) isolated from tertiary care hospital of Pakistan**

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Introduction: *Staphylococcus aureus* is a major pathogen associated with serious community and hospital-acquired infections. By designation methicillin resistant *Staphylococcus aureus* (MRSA) is a strain of *Staphylococcus aureus* that is resistant to all beta-lactams, including penicillins, cephalosporins and carbapenems. Vancomycin has a narrow spectrum of activity, restricted to most Gram-positive bacteria, and is the drug of choice for the treatment of MRSA. This agent, however, requires intravenous administration, and occasionally patients experience unacceptable side effects and there is rapid emergence of resistance against this drug. Linezolid has shown very good activity against *MRSA*, has excellent oral bioavailability and is inexpensive as compared to vancomycin. Tigecycline a new addition to tetracyclines has also shown good results but chloramphenicol an older, inexpensive and easy to administer drug is also found to be highly effective against MRSA.
Aims and Objectives: Comparison of in vitro activities of chloramphenicol, tigecycline and linezolid against MRSA.
Materials and Method: The study was conducted over a period of 6 months. Fifty MRSA isolated from the clinical isolates of Military hospital Rawalpindi, Pakistan were subjected to the determination of Minimum inhibitory concentrations (MICs) of linezolid, chloramphenicol and tigecycline using E-strips. MIC_{50} and MIC_{90} were calculated.
Results: All the isolated organisms were highly susceptible to these antibiotics. MRSA were 100% susceptible to linezolid, 94% to chloramphenicol and 93% to tigecycline.
Conclusion: This study suggests that linezolid, cloramphenicol and tigecycline have high in vitro efficacy for MRSA infections. Linezolid's and cloramphenicol's oral dosing options can allow earlier discharge of hospitalized patients and their low cost reduces health care expenses and can also help in reducing chances of Vancomycin resistant strains.