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Linezolid anti MRSA Drug

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ABSTRACT

One may argue that linezolid was the pioneer among the oxazolidinone antibiotics. This chemical is an antibiotic that has been synthesised. It binds to rRNA and stops bacteria from making proteins. Additionally, it slows down the pace of translation elongation reactions and prevents the formation of the initiation complex during protein synthesis, both of which shorten the produced peptide chains. A number of infections have been approved for treatment with linezolid, including those caused by vancomycin-resistant Enterococcus faecium, Staphylococcus aureus pneumoniae in hospitals, complicated SSSIs, uncomplicated SSSIs caused by methicillin-susceptible S. aureus or Streptococcus pyogenes, and Streptococcus pneumoniae in community settings.

KEYWORDS: Linezolid, MRSA, MSSA, Broad spectrum antibiotic

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INTRODUCTION

Since its introduction in 1978, linezolid which is regarded as the founding member of the oxazolidinone antibiotic class has been used to effectively treat plant infections.[1]

Linezolid, synthetic oxazolidinone antimicrobial. The drug treats pneumonia of bacterial origin, skin infections, and infections of VRE, particularly those with bacteremia. Recommended for gram-positive infections.

The main use of linezolid in treatment is as an inpatient vancomycin substitute. The usual therapy for MRSA (methicillin-resistant Staphylococcus aureus) infections is still vancomycin. Nevertheless, vancomycin-resistant S. aureus isolates have surfaced, and there are a growing number of these isolates being reported globally. Before utilizing linezolid in outpatient settings, other treatment options should be taken into account because improper usage of the medication has increased the number of enterococci that are resistant to vancomycin.[2]

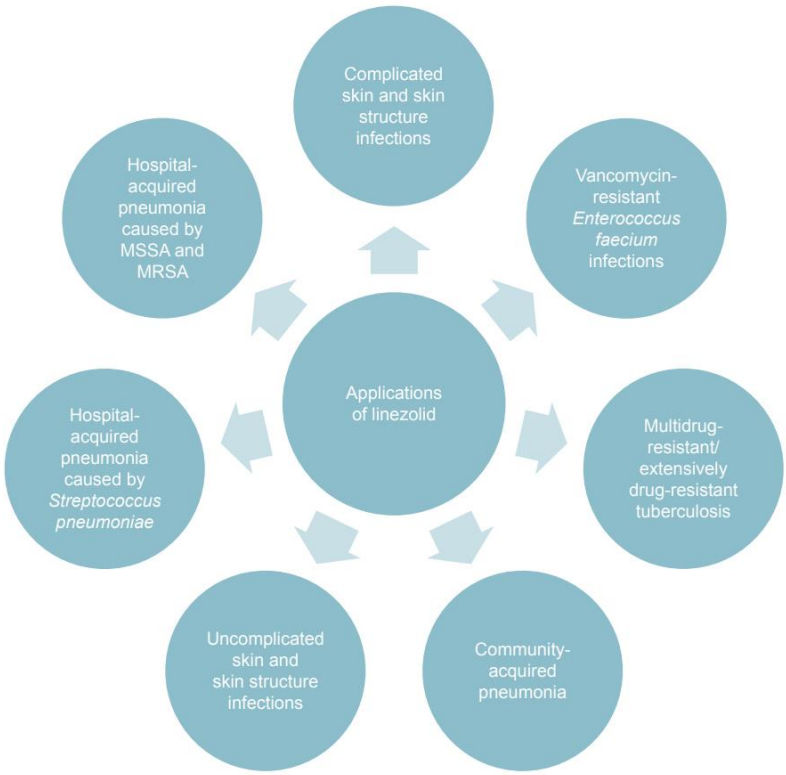
For MRSA-related purulent and non-purulent cellulitis, community-associated MRSA skin and soft tissue infections, and hospitalized adult patients with complex soft tissue infections and epidermis, linezolid is advised as an empirical treatment option.[2]

ACTION MECHANISM OF LINEZOLID

Linezolid is a man-made antibacterial that blocks synthesis of protein by binding to ‘‘rRNA on the 30S and 50S’’ ribosomal subunits of bacteria.[3] It hinders translation by stopping the initiation complex formation, which might reduce the length of newly synthesized peptide chains.[3] However, there are inhibitors of protein synthesis that halt the elongation process after the initiation phase. Due to the high specific region of inhibition, resistance to other drugs that act on protein synthesis inhibition has not been shown.[4] Linezolid has the potential to diminish the toxin generation from Gram-positive infections by inhibiting the synthesis of virulence factors.[5]

Main indications of Linezolid

Linezolid has received approval from the FDA for therapeutic use in the treatment of the following medical conditions: The conditions that will be discussed in this paper include:



Common adverse Effect of Linezolid

The most common **adverse Effect** include neuropathy of peripheral and ocular nerves[8,9], decreased RBC number that occurs by linezolid has a directly effect on bone marrow synthesis red cell population which lead to anemia[10], Thrombocytopenia[11], lactic acidosis[12], diarrhea, nausea, and headache[13], hypoglycemia;[14] and reticulocytopenia.[15]

CONCLUSION

The outcomes of the clinical studies that are now being conducted on linezolid for the treatment of MRSA pneumonia and VRE infections are beneficial for doctors and provide clear evidence that the medicine is effective. Despite the fact that linezolid is effective against strains that are resistant to many drugs.

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