



## A CASE REPORT ON LINEZOLID INDUCED HYPERSENSITIVITY REACTIONS

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### ABSTRACT

A 15 year old female patient was infected with abscess on right axilla. It required a surgical management. She was post operationally treated with IV antibiotics (Cefoperazone + Sulbactam) but the wound doesn't heal. So she was prescribed with linezolid. Linezolid is the first member of the synthetic antimicrobial agent 'Oxazolidinone' approved for treatment of complicated and uncomplicated skin and soft tissue infections. In this case soon after administration of first dose of drug prescribed itching, rashes, shortness of breath, angioedema and unconsciousness was observed as a result of hypersensitivity reactions. This condition was managed with Inj. Hydrocortisone and Inj. Avil and suitable supportive measures. Doctors must be careful for the unusual side-effects of this drugs and should take suitable measures to manage it.

**KEYWORDS:** Linezolid, Hypersensitivity, Angioedema.

### INTRODUCTION

Linezolid is a synthetic antibacterial agent of the oxazolidinone class of antibiotics. It has in vitro action against gram positive, gram negative, anaerobic bacteria and multi-resistant strains. It selectively inhibits bacterial protein synthesis through binding sites on the bacterial ribosome and prevents formation of a functional 70s-initiation complex. Adverse effects associated with linezolid range from nausea, vomiting to myelosuppression while cutaneous reactions are rare. Angioedema can occur rarely, which is a swelling caused by fluid leakage from blood vessels into the surrounding skin and tissue. It can involve any part of our body but is usually more around the eyes, lips, mouth, tongue, extremities, and genitalia. The swelling may be accompanied by hives which are superficial, which angioedema affects the deeper layers of the skin.<sup>[2]</sup> Here we report a case of linezolid induced hypersensitivity reaction in a 15 year old female patient who underwent surgical treatment for sebaceous abscess. Drug hypersensitivity reactions are unpredictable drug reactions. They manifest either within 1-6 hours following drug intake with mild to life threatening symptoms of anaphylaxis, or several hours to later.

### CASE REPORT

A 15 year old female with infected sebaceous abscess on right axilla requiring surgical treatment was admitted in the local hospital. She was on post surgical treatment with IV antibiotics (Cefoperazone + Sulbactam),

analgesics (Tramadol, Paracetamol and aceclofenac), Pantoprazole, Seratopeptidase for the first 5 days admission.

Even after 5 days the wound infection was not curing, then the doctor advised Injection Linezolid which can be used for the treatment of skin and skin structure infections. Linezolid 600mg IV was given. Approximately after 30 min of injection the patient got complaints with itching on the right hand and leg and developed rashes all over the body. Soon she had shortness of breath, angioedema and finally she become unconscious. But her vital signs remained normal. Immediately supportive care was given to the recover the patient. She was provided with oxygen mask. Inj. Hydrocortisone 100mg and Inj. Avil was give to manage the hypersensitivity. Nebulisation budecort and IVF Normal saline was also given.

Soon after 1 hour patient came to normal condition. Thereafter Inj. Linezolid was discontinued and doctor advised to give Inj. Cefixime + sulbactam for further treatment to treat the wound. Then wound began to heal and was clear at the time of discharge. Discharge medications includes Amoxicillin Clavulanate, Ranitidine, Paracetamol + Aceclofenac, Serratopeptidase.

## DISCUSSION

Drug allergy to antibiotics occurs as immediate or non-immediate (delayed) hypersensitivity reactions. Immediate hypersensitivity reactions are mediated by IgE (Immunoglobulin E) whereas non-immediate reactions are usually non-IgE mediated.<sup>[4]</sup>

Linezolid is newer class of synthetic antibacterial agents belong to oxazolidinones. This drug act by interfering the step of initiation of protein synthesis in the bacteria. This is approved for the use in infections caused by gram positive organisms including drug resistant enterococcus, staphylococcus and psuedococcus strains.<sup>[1]</sup>

In the comparator controlled clinical trials incidence of adverse reaction was  $\geq 2\%$  and was comparable with comparators involved in the study [ceftriaxone, clarithromycin (Biaxin), dicloxacillin (Pathocil), oxacillin (Bactocill), and vancomycin]. The major adverse reactions were rashes, diarrhoea, nausea, vomiting, headache, insomnia, constipation and fever.<sup>[7]</sup>

Even though, hypersensitivity to Linezolid is rare but it can happen in any individual who are susceptible. In this case the subject immediately developed hypersensitivity followed by the administration of Linezolid which included hives, shortness of breath and angioedema.

There are also reports on linezolid induced urticaria and angioedema. Patient developed these symptoms after 12 hours of linezolid therapy followed by which the drug was discontinued and prescribed with another antibiotic. Linezolid was discontinued and the symptoms were managed with cetirizine and one dose of dexamethasone.<sup>[3]</sup>

In the current case the subject was managed with one dose of Inj.Hydrocortisone 100mg and Inj. Avil. Soon after that Inj.Linezolid was discontinued and Inj.Cefixime-Sulbactam was prescribed.

Acquires angiodema can be caused by drug and it can be IgE mediated or non-IgE mediated. Linezolid was found to be the probable cause of urticaria, angioedema and shortness of breath based on Naranjo adverse drug reaction probability scale.

Black hairy tongue (BHT), a rare adverse reactions with prolonged use of Linezolid was documented in some studies.<sup>[5]</sup>

Studies on linezolid induced life-threatening lactic acidosis were also documented.<sup>[6]</sup> For the conditions where the linezolid is the only better choice of drug available, there exist certain drug desensitization strategy that induce temporary tolerance to the drug allowing patients to safely use medications that they would otherwise not tolerate.

## CONCLUSION

Linezolid induced dermatological reaction are not uncommon but angioedema is infrequent. Angioedema can lead asphyxiation when the swelling of throat and airways occurs. Hypersensitivity reactions should be identified soon and reported. Administration of test dose is important in avoiding the complications of hypersensitivity reaction due to the drug. This case report will give an awareness to the healthcare professionals about the angioedema associated with linezolid. Furthermore, it should be documented in the medical records to avoid the similar events with the same drug in future and to use suitable alternative drugs whenever required.

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