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Case study on linezolid induced black hairy tonuge

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Abstract

A young lady of aged 22 years is been admitted to hospital with a chief compliant of unable to walk and surgery wound is didn't heal .With MRI impression of a small synovial cyst is seen at left l5-s1 facet joint .They gave linezolid of 600mg BD for 10 days but discoloration of tongue is observed in 4TH day of the treatment and they still continued the drug after the discontinuation.

Keywords: 22 Years, Case Study, Linezolid, Discoloration of Tongue.

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Introduction

Linezolid is a synthetic antibiotic, the first of the oxazolidinone class, used for the treatment of infections caused by multi-resistant bacteria including streptococcus and methicillin-resistant Staphylococcus aureus (MRSA). The drug works by inhibiting the initiation of bacterial protein synthesis. Linezolid is active against most Gram-positive bacteria that cause disease, including streptococci, vancomycin-resistant enterococci (VRE), and methicillin-resistant Staphylococcus aureus (MRSA). Its use in the community has increased tremendously because it is active against methicillin–resistant staphylococcus aureus (MRSA) and vancomycin–resistant enterococci (VRE). Linezolid is also an MAO (monoamine oxidase) inhibitor ,used to treat different types of bacterial infect ions, such as pneumonia, skin infections, and infections that are resistant to other antibiotics. It is a synthetic antibiotic that is effective against bacteria such as Enterococcus faecium, Staphylococcus aureus, Streptococcus agalactiae, Streptococcus pneumoniae, Streptococcus pyogenes, and others. It is effective against Staphylococcus aureus isolates that are resistant to other antibiotics. Linezolid-induced black discoloration of the tongue is the most common discoloration encountered; however, yellow, orange, brown, and green discoloration has also been reported. It is due to defective desquamation of dorsum of the tongue, usually involving posterior one-third. It has high bioavailability and patients are discharged early from the hospital. It offers an economic advantage over other MRSA options. It is also used for uncomplicated skin and soft tissue infections. The most common side effects include head ache, nausea, vomiting and diarrhoea. Linezolid has been associated with reversible myelosuppression. Clinical trial data were evaluated for anemia, thrombocytopenia, and neutropenia. Thrombocytopenia and a slight increased risk for anemia were evident at ≥2 weeks of linezolid treatment and also reversible bone marrow suppression and neuropathies [1, 2].

Linezolid causes either blackish discoloration of the tongue or oral mucosa or it causes hypertrophy and pigmentation of the filliform papillae, known as "black hairy tongue", both are rare side effects. It is seen that darkening of the oral mucosa and the tongue is a reaction pattern that can occur due to a large number of physiologic, toxic, metabolic disorders, and exogenous substances [3]. Several antibiotics including linezolid can cause this adverse effect it.

CASE REPORT

A young lady of aged 22 years had gone for surgery of micro discetomy because of l5-s1 disc protrusion. She has been discharged the one day after the surgery and she had been of early mobilization after surgery .After few days she is went with chief compliant of unable to walk and her surgery wound didn't heal since 10 days .Her MRI Impression is of post l5 of laminectomy and l5-s1 discetomy, present scan shows: post operatives changes in form of defect in the posterior elements of l5 vertebrata. A small fluid collection of ~2.2*1.9*1.2cm size is seen at post operative site posterior to Dural sac .A small t1, t2 hypo intense lesion is seen within it? Small bony fragment /haemorehagic residue. Mild surroundings edema is seen. The residual disc at l5-s1 vertebral levels shows posterior-central disc protrusion with mild bilateral neural foraminal narrowing (left>right).A small synovial cyst is seen at left l5-s1 facet joint. .she was been given of pregabalin 75mg H/S,deflazocort of 30mg BD,duloxetine of 5mg BD, paracetomol of 1000mg BD and acelofenac of 100mg BD, linezolid 600mg BD. Ointment of Megaheal to heal the surgery wound. There is a drug interaction of duloxetine with linezolid of serious one, i.e. linezolid and duloxetine both increase serotonin level.In which linezolid may increase as a result of MAO-A inhibition. If linezolid is administered, have to discontinue serotenergic drug immediately and have to monitor CNS toxicity. On the 4TH day of the treatment she had experienced discoloration of tongue but they didn't discontinue the drug as it is an antibiotic for the infection. On the 10TH day they discontinued the drug.

Fig: 1 Discolouration of Tongue

CAUSALITY ASSESSMENT

NARANJO ALOGRITHM SCALE

1.	Are there previous conclusion these reactions?	+1 (yes)
2.	Did the ADR appear after the suspected drug was administered?	+2(yes)
3.	Did the ADR improve when the drug was discontinued?	+1(yes)
4.	Did the ADR reappear when the drug was readminstered?	0(don't know)
5.	Are there alternative cause (other than the drug)that could on their own have caused the reaction?	+2(no)
6.	Did the ADR reappear when a placebo was given?	0(don't know)
7.	Was the drug detected in the blood (or other fluids) in the concentration to be toxic ?	0(don't know)
8.	Was the ADR more severe when the dose was increased?	+1(yes)
9.	Did the patient have similar reaction to the same or similar drugs?	0(don't know)
10.	Was the ADR confirmed by any objective evidence?	0(no)
	TOTAL SCORE	**7[PROBABLE]**

DISCUSSION

Black discoloration of the tongue has been described with medications including certain antibiotics namely cephalosporins, pencillins, clarithromycin, tetracyclins and sulfonamides, other medicines include steroids, methyldopa and lansoprazole[1]. In elderly renal transplant patients linezolid has been associated with reversible black discoloration of the tongue and lips[2]. This rare side effect is reported in 1.1% of (548 patients) in comparator-controlled trials.[3] .Blackish discoloration of the tongue should be distinguished from black, "hairy" tongue which occurs due to the hypertrophy of the filiform papillae. Linezolid associated black hairy tongue is also a rare association [4]. Med line search (from January 2000 till February 2013) revealed only 6 reported cases of this condition [1, 2, 4–7]. Median duration from initiating linezolid

therapy to the diagnosis of black discoloration was 2weeks.Discoloration resolved after discontinuation of linezolid after a median of 7 days. In two of the reported cases no changes were observed in the filliform papillae so these patients were labelled as linezolid induced black discoloration of the tongue rather than black hairy tongue. Black hairy tongue is self-limiting condition in which there is abnormal hypertrophy and elongation of the filliform papillae on the surface of the tongue[8]. There is no objective criteria for diagnosing this condition.[9] Using the naranjio adverse drug reaction propability scale we present a case of probable linezolid - induced BHT. In a 22yrs young lady female. The patient's concomittant medications have not been reported to cause BHT. Although a drug -drug interaction is a remote possibility,to the best of our knowledge,no such interactions have been reported. The diagnosis of BHT relies on the visual identification of discoloured ,elongated and hypertrophied filiform papilae. Taking a detailed history is important in identifying contributing factors.The diagnosis of Black hairy tongue relies on the identification of discoloured, elongated and hypertrophied filliform papillae. Once diagnosed the main stay of treatment is discontinuation of the offending medication and encouraging good oral dental hygiene [10], If needed gentle cleaning of the tongue can be done with a soft tooth brush and baking soda or three percent hydrogen peroxide [8].

CONCLUSION

However the exact mechanism of drug induced BHT (black hairy tongue) is unknown. Linezolid induced black hairy tongue is an uncommon, benign, self limiting disorder. A thorough history should be obtained to rule out for risk factors in the setting of concomitant linezolid use. Further studies are needed to identify the exact mechanism of linezolid -induced BHT and to develop objective criteria for establishing the diagnosis.

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