

## Short Communication

# Xanthinol nicotinate induced bullous drug eruption

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Sir,

A 59-year-old male, chronic smoker presented with pain and burning sensation in the 3<sup>rd</sup> toe of the right foot of one-year duration. He had similar complaints 3 years prior, in the 4<sup>th</sup> and 5<sup>th</sup> toes which resulted in auto-amputation. A diagnosis of thromboangiitis obliterans was made and the patient was treated with Inj. xanthinol nicotinate IV 3000mg, 4500mg and 6000mg respectively in 250ml of normal saline over three consecutive days. On day 2, patient developed itchy vesicles and edema on the left forearm at the site of IV cannula (**Figure 1**). Diffuse erythema of face, trunk and proximal extremities was also seen (**Figure 2**). Considering a possibility of acute drug reaction to xanthinol nicotinate, patient was advised to stop the injection and was treated symptomatically with anti-histaminics and topical steroids.

Four days after stopping the injection, the lesions were not only persistent but had worsened to form tense bullae on the left arm and bilateral forearms (**Figures 3**). Multiple vesicles were present over the abdomen on a background of erythema. Tzanck smear from the bullae showed few eosinophils. Complete haemogram and biochemical parameters were within normal limits except for mild eosinophilia (12.9%). Skin biopsies were done which on histopathological examination

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**Figure 1** Tense blisters and edema at the site of IV cannula on left forearm.



**Figure 2** Erythematous patches on trunk.



**Figure 3** Tense bullae on both forearms.

showed features confirming drug-induced acute spongiotic dermatitis while direct immunofluorescence from perilesional skin was negative, ruling out the possibility of drug induced bullous pemphigoid. The patient was started on oral steroids along with

symptomatic measures with which the patient recovered completely in about a week. Though rechallenge with the culprit drug was contemplated on a later date, it was deferred due to the severe nature of the initial reactional episode.

## Discussion

Xanthinol nicotinate is the most potent form of niacin i.e. vitamin B3, which passes easily through cell membranes. Its general properties are similar to those of nicotinic acid, to which it is slowly hydrolysed. Doses of upto 3g daily may be given by mouth. It has also been given by intramuscular or slow intravenous injection.<sup>1</sup>

Xanthinol nicotinate has been employed for its vasodilator action in the treatment of cerebral and peripheral vascular disorders. Though not established, it has been clinically proven to be effective in peripheral vascular diseases. It increases brain glucose metabolism, improves levels of ATP within the brain, and acts as a vasodilator. As such, it has been used to treat short term memory disorders, and lack of brain energy that is thought to compromise vigilance, concentration and attention. In high doses, nicotinic acid has beneficial effects on blood lipid profiles, and has been used with dietary modification and often with other lipid regulating drugs, in hyperlipidaemias.<sup>2</sup>

At a low dose, some minor side effects such as flushing, nausea, heartburn, itchy skin or vomiting may occur. These normally dissipate at lower doses or with continued use. Other adverse effects that have been reported

especially, following high doses include dryness of the skin, pruritus, hyperpigmentation, abdominal cramps, anorexia, activation of peptic ulcer, amblyopia, impairment of liver function, hyperglycaemia and hyperuricaemia. Dermal and gastrointestinal reactions are most common. Truncal and facial flushing are reported in 90-100% of treated patients in large clinical trials.<sup>3</sup>

We could find only one case report of bullous drug rash to Inj. xanthinol nicotinate reported by Khan *et al.*<sup>4</sup> In our patient, in view of the tense bullae, a differential diagnosis of bullous pemphigoid was considered and direct immunofluorescence was done to rule out the same. An extensive PUBMED search failed to reveal similar drug reaction to xanthinol other than the one mentioned above. Ours is the second case of bullous eruption to IV injection of xanthinol nicotinate reported so far in English literature.

## References

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