

## SIDE EFFECTS OF LACTULOSE SYRUP: CAN IT CAUSE BLISTERS IN THE ANUS AND GENITALS?

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**Abstract:** Lactulose syrup is commonly used to treat constipation by increasing osmotic pressure in the intestines, which leads to softer stools. However, it may cause side effects, such as a fixed drug eruption—a type of skin reaction that can become chronic if unrecognized. This report presents the case of a 42-year-old male patient who developed blisters in the anal and genital areas after taking lactulose syrup for constipation. Despite self-treatment with gentamicin ointment, the blisters persisted. The mechanism behind fixed drug eruptions is not fully understood but may involve an immune response triggered by drug exposure. This case highlights the potential for unexpected adverse reactions to lactulose syrup, underscoring the need for awareness and careful consideration of patient history in treatment.

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## INTRODUCTION

Lactulose syrup is a well-known osmotic laxative commonly used for the treatment of constipation [1]. It functions by breaking down in the intestines into low-molecular-weight organic acids such as lactic acid and acetic acid, which subsequently increase the osmotic pressure in the gut [1,2]. This action draws water into the bowel, softening the stool and facilitating easier passage [2]. Beyond its use in treating constipation, lactulose is sometimes prescribed to manage hepatic encephalopathy by reducing blood ammonia levels [3]. However, like all medications, lactulose is not without its potential side effects [2,4]. One notable adverse reaction is the development of a fixed drug eruption (FDE), a type of drug-induced skin reaction. FDEs are characterized by the recurrent appearance of lesions at the same site each time the offending drug is taken [5]. This condition is considered one of the most common forms of drug eruptions and can lead to chronic cosmetic issues if not properly managed [5]. Unfortunately, fixed drug eruptions are often underreported due to their mild symptoms, which can easily be overlooked or misattributed to other causes. This lack of awareness among both patients and healthcare providers can result in prolonged exposure to the offending drug, potentially worsening the condition. Proper identification and management of FDEs are crucial to preventing chronic complications and improving patient outcomes.

### Case

A 42-year-old male patient came with complaints of difficulty defecating for 2 days.

Accompanied by complaints of dizziness, nausea, and vomiting. From the results of a physical examination of the abdomen it was found to be soft, positive bowel sounds had decreased and there was no pressure pain. The patient received domperidone 3 times a day, omeprazole 2 times a day, mefenamic acid 2 times a day, vitamin B complex once a day, and lactulose syrup 3 times a tablespoon. Then after drinking lactulose syrup in the evening the patient experienced blisters in the anus and genitals. The patient bought his own ointment, namely gentamicin, but the blister marks had not dried up.

## DISCUSSION

Lactulose works by increasing the osmotic pressure in the lumen of the digestive tract, so that fluid levels in the intestine increase and the feces become softer, lactulose also increases peristalsis [1,6]. In the colon, bacteria will break down lactulose into lactic acid and acetic acid so that the acid in the colon increases [7,8]. This more acidic condition of the colon will cause the diffusion of ammonia ( $\text{NH}_3$ ) from the blood to the intestines and convert it into ammonia ions ( $\text{NH}_4^+$ ) [7,8,9]. Lactulose causes ammonia ions to remain in the colon and not be absorbed or returned to the blood [7,8]. In the case of fixed drug eruption, the exact mechanism is still unknown. Recent research suggests the existence of a cell-mediated process that triggers both active and inactive lesions. This process may involve an antibody-dependent, cell-mediated cytotoxic response [7,8]. CD8 effector/memory T cells play an important role in the reactivation of lesions due to exposure to triggering drugs [9]. This disturbing drug is thought to function as a hapten that binds more to basal keratinocytes, thereby causing an inflammatory response in certain predilections, including the genitals or rectum. Acetic acid is a substance involved in drug eruptions that is formed due to the breakdown of lactulose by colon bacteria [10].

## CONCLUSION

The use of the drug lactulose syrup can result in unexpected side effects namely fixed drug eruption. Which can occur with certain predilections, namely blistering on the anus and genitals, but it is not possible for this to happen due to the use of other drugs and the history of certain diseases suffered by the patient which is not yet known.

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