

Commentary

Hairy drinking may cause severe hangover symptoms in patients taking low-dose minoxidilDaniel Töröcsik,^{1,2}  and Tünde Várvölgyi¹¹Department of Dermatology, MTA Centre of Excellence, Faculty of Medicine, University of Debrecen, Debrecen, Hungary; and ²HUN-REN-DE Allergology Research Group, Debrecen, Hungary**Keywords**

alopecia; minoxidil; alcohol; hangover; low-dose oral minoxidil.

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Conflict of interest: None.

Funding source: None.

doi: 10.1111/ijd.17317

By the age of 70, approximately 80% of men and 50% of women will experience androgenetic alopecia, which accounts for 90% of all cases of alopecia and diminishes the quality of life for many. It is characterized by hair loss with a typical pattern, 5- α -reductase and dihydrotestosterone mediated hair follicle miniaturization, and the replacement of terminal hairs by vellus hairs. Important differential diagnoses include telogen effluvium and alopecia areata. Possible treatments are minoxidil, alpha-reductase inhibitors, platelet-rich plasma, low-level light/laser therapy, and hair transplantation, of which minoxidil, a vasodilator initially developed to treat hypertension, is most commonly used in low doses both orally and topically.

In the current issue, Alhanshali and co-authors¹ report that after prescribing low-dose oral minoxidil (LDOM) to hundreds of

male patients with androgenetic alopecia, 10 reported worsening alcohol hangover symptoms such as excessive headache, nausea, and light sensitivity (Figure 1). As a result, they advise these patients not to take their LDOM dose on the day they anticipate excessive alcohol consumption.¹

Although the explanation for the aggravation of the hangover, as well as the cause of the hangover itself, remains to be determined as a possible explanation, the authors point to the results of an online drug interaction checker, which suggests a mild interaction between alcohol and minoxidil, leading to additive effects in lowering blood pressure. Similarly, the increased expression of sulfotransferase 1A1 (SULT1A1) in the outer root sheath of hair follicles, an enzyme responsible for the metabolism and activation of minoxidil, upon ethanol exposure may

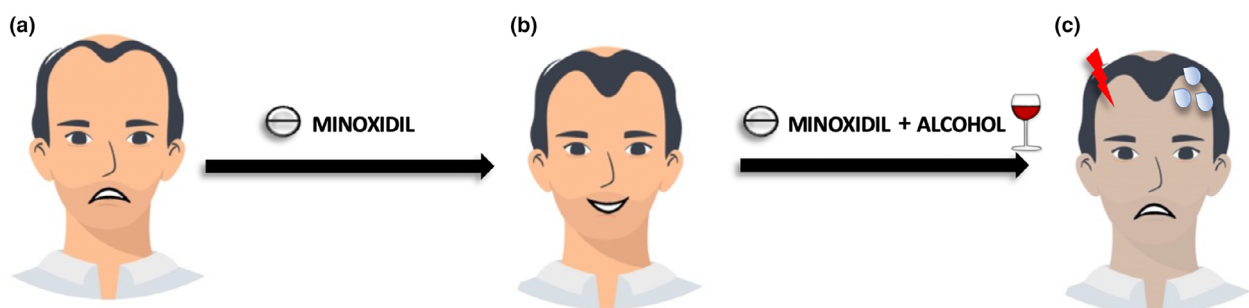


Figure 1 (a) Androgenetic alopecia can cause distress, represented by the sad face. (b) The positive effects of low-dose oral minoxidil (LDOM) on hair growth lead to satisfaction, represented by the happy face. (c) However, LDOM can cause severe hangover symptoms in some men after drinking alcohol, as reported by Lo Sicco and coauthors. Image adapted and modified from iStock-2097374066

also play a role. However, there may be numerous other possibilities, such as the modulation of enzyme functions or competition for the same metabolic pathways, as in the case of retinoids, which are partially metabolized by alcohol dehydrogenases (ADH).²

Notably, alcohol consumption may also alter disease pathogenesis, mainly since the enzymes responsible for alcohol metabolism, such as ADH1B, are expressed not only in the liver, where the majority of alcohol metabolism takes place but also in the skin.³ Supported by transdermal alcohol measurements, ethanol and its metabolite acetaldehyde, which may have indirect effects on the presence and severity of alcohol hangover, could reach biologically relevant levels in the skin. As a result, ethanol could alter the activation and proliferation of immune cells and keratinocytes.⁴ Another interesting piece of the puzzle, among many, may be that alcohol consumption increases the metabolic clearance rate of testosterone in most male subjects, highlighting that there are a large number of possible interactions to be uncovered and that alcohol is not just about causing chemical changes in the brain.⁵

Albeit the limited evidence provided by Alhanshali *et al.*,¹ which underpins their observations on the potential effects of

low-dose LDOM on alcohol hangovers, their findings are of particular interest, as these may serve as clinically relevant starting points for further studies concerning various dermatologic diseases influenced by alcohol in terms of pathogenesis and treatment.

References

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