

Assessment of Vestibulotoxicity of Henna Leaf (*Lawsonia inermis*) in a Rat Animal Model

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Introduction: Otomycosis is a stressful and complicated condition for both patients and otolaryngologists, since it always needs long-term care and follow-up, but the recurrence rate remains large. Management is targeted towards intensive aural toileting with the administration of topical antifungals. Classical antifungal agents, which include azoles and polyenes, have shown an increased resistance. This has contributed to studies looking into medicinal plants as an alternative therapy for fungal infections.

Objective: This research aims to examine the potential vestibulotoxic effects of the henna leaf (*Lawsonia inermis*), an ancient folk medicine, on the inner ear of a rat animal model.

Methods: Twenty-four healthy, adult male Wistar Kyoto rats were categorized into three groups; group A (8 animals), group B (8 animals), and group C (8 animals). Baseline vestibular parameters of rats in Group A and B were tested before endoscopic-guided trans tympanic installation of aqueous and ethanol henna extract into the right middle ear was performed. At the same time, normal saline was instilled in the right middle ear of rats in Group C. Vestibular parameter testing were conducted on rat's post instillation of trans tympanic henna at intervals of 4 hours, 24 hours, 48 hours, 72 hours, 1 week, 2 weeks and 3 weeks.

Results: All vestibular parameters documented were not affected after the installation of henna extract into the middle ear.

Conclusion: Henna extract is safe and may serve as a potential alternative treatment for otomycosis even with tympanic membrane perforation. Further on, it can be pharmacologically designed as a good alternative as a topical antifungal agent to treat otomycosis. It does not have any vestibulotoxic adverse effects in this study; however, further clinical research can be carried out to support this evidence-based study and validate its effectiveness.

Keywords: henna, otomycosis, vestibulotoxic, middle ear, antifungal

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