

P9.123 A RANDOMIZED TRIAL OF ADENOSINE IN ANDROGENETIC ALOPECIA

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Objective: Adenosine up-regulates the expression of fibroblast growth factor 7 (FGF7) and vascular endothelial growth factor (VEGF) on cultured dermal papilla cells via adenosine receptors. We therefore speculated that adenosine stimulates growth of hair fiber due to the action of FGF7 and VEGF for epithelial cells in hair follicles. In this study, we performed a clinical trial to investigate the efficacy and safety of adenosine in hair loss associated with androgenetic alopecia (AGA).

Methods: A hundred and four volunteers with AGA were registered in a randomized double-blind trial that used an adenosine (0.75%) topical lotion or niacin amide (0.1%) topical lotion twice daily for 6 months. Efficacy was evaluated by investigator assessments of change in global scalp coverage, change in the ratio of vellus-like (under 40 micrometers in diameter) and thick hairs (not less 60 micrometers or 80 micrometers in diameter), and hair density, in vertex.

Results: Fifty-one of 52 adenosine-treated subjects and 50 of 52 niacin amide-treated subjects completed the 6-month study. For global improvement, adenosine was significantly superior to niacin amide. Treatment with either lotion resulted in a significantly decreased ratio of vellus-like hair and also significantly increased the ratio of thick hair, but did not change hair density. Regarding the increase in the ratio of thick hair, adenosine was significantly superior to niacin amide. Adverse effects were not found.

Conclusion: In men with AGA, adenosine increased hair growth and thickened vellus-like hair without side effects. It would appear that the efficacy of hair growth results from the effects of FGF7 and VEGF which are stimulated by activation of adenosine receptors on dermal papilla cells.