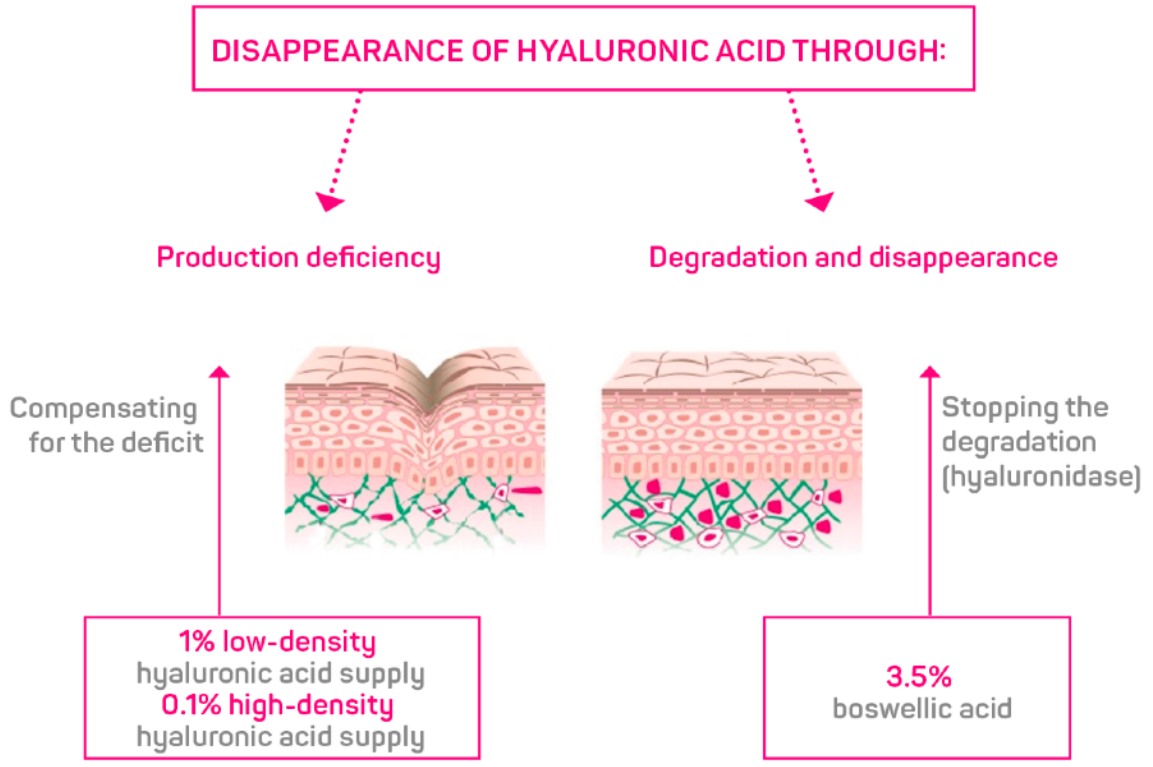
Scientific Article – Prospective Cytoderm® Study on Dermatoporosis

Abstract

Dermatoporosis is a chronic cutaneous insufficiency syndrome characterized by depletion of the extracellular matrix, a reduction in hyaluronic acid (HA), and marked tissue fragility. This prospective study evaluates the clinical efficacy of a formulation combining dual-density hyaluronic acid (low density 1% and high density 0.1%) with boswellic acid (3.5%) in 33 patients presenting with dermatoporosis. Evaluated parameters included skin plumping, firmness, smoothness, and a global composite score reflecting overall satisfaction. Results, compared with mean values reported in studies using hyaluronic acid alone, demonstrate an overall efficacy 3 to 3.5 times greater. These findings suggest a biomolecular synergy between exogenous hyaluronic acid supplementation and inhibition of hyaluronidase by boswellic acid.

Introduction

Dermatoporosis results from a progressive alteration of cutaneous homeostasis, characterized by a reduction in dermal density, decreased production of hyaluronic acid, and increased enzymatic degradation. Consequences include skin thinning, increased fragility, and reduced mechanical resistance. Current topical interventions show limited efficacy. The strategy combining hyaluronic acid with boswellic acid aims to restore dermal HA levels while simultaneously reducing its degradation.



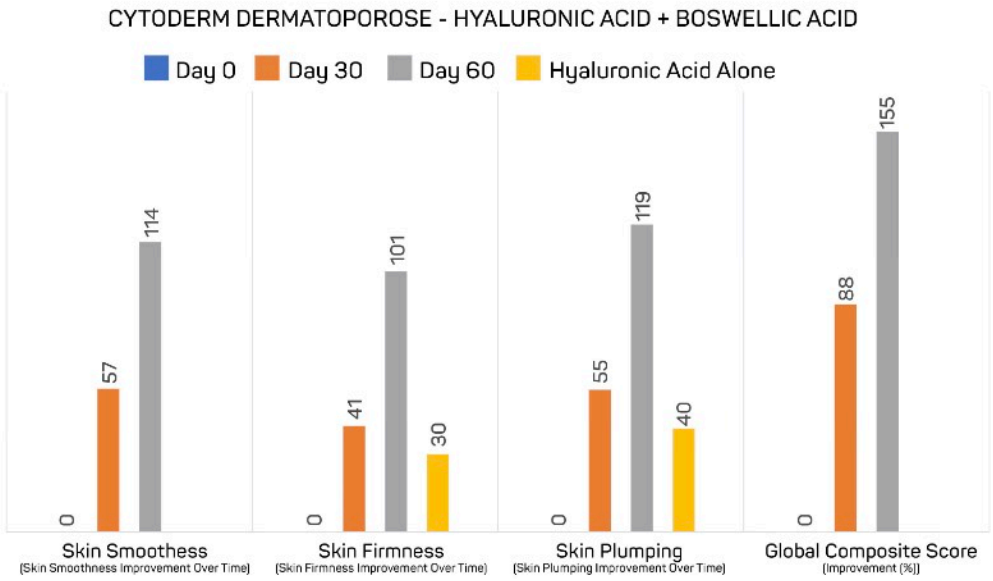
Methods

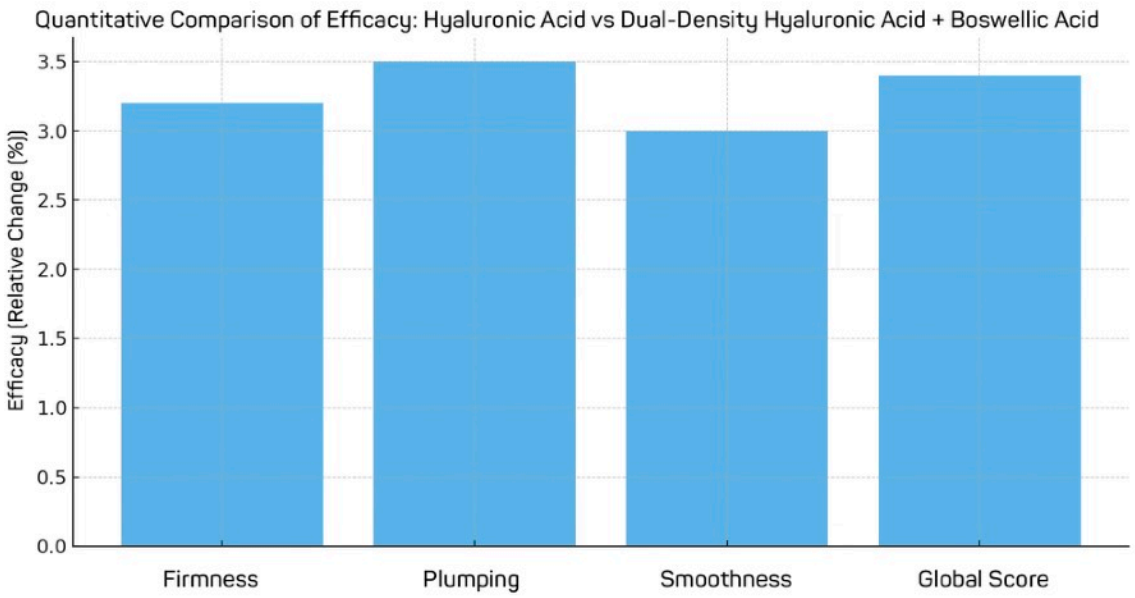
This was a prospective, single-center study including 33 patients with clinically diagnosed dermatoporosis. Assessments were conducted at baseline (Day 0), Day 30, and Day 60. Evaluation criteria included: (1) skin plumping (dermal hydrodensity), (2) firmness, (3) smoothness, and (4) a global composite score integrating the three dimensions. Results were compared with mean data from studies evaluating hyaluronic acid alone (+30% firmness; +40–45% plumping).

Results

At Day 60, all parameters showed marked and consistent improvement. The relative efficacy of the combination compared with mean values reported for hyaluronic acid alone ranged from a factor of ×3 to ×3.5. This outcome is consistent with enhanced dermal availability of HA resulting from hyaluronidase inhibition by boswellic acid.

Quantitative Comparison of Efficacy:





Discussion

The combination of hyaluronic acid and boswellic acid addresses several pathophysiological mechanisms of dermatoporosis. Dual-density hyaluronic acid enables multi-layer diffusion, optimizing dermal rehydration and volumetric restoration. Boswellic acid inhibits hyaluronidase, thereby reducing enzymatic degradation of hyaluronic acid. This synergy leads to a significant and sustained increase in dermal hydrodensity, firmness, and skin texture. These results support the relevance of the pending worldwide patent covering this innovative formulation.

Conclusion

This prospective study demonstrates efficacy far superior to that expected with hyaluronic acid alone. The combination of hyaluronic acid and boswellic acid represents a promising therapeutic approach for the management of dermatoporosis. Further randomized studies with larger cohorts will be required to confirm these findings.