



HAIR DISORDERS

EXOSOME FOR HAIR REGENERATION: FROM BENCH TO BEDSIDE

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Introduction: Exosome, a relatively recently founded 30- to 150-nm-sized extracellular vesicle, is secreted from most cells and acts as a communicator between them.

Objective: We would like to explore whether exosomes from mesenchymal stem cells (MSCs) could be used as a novel therapeutic option for hair loss.

Materials and Methods: Several in vitro experiments have tried to evaluate the function of exosome on hair follicle cells.

Then, we conducted a pilot study to prove the efficacy of exosome for the treatment of male and female pattern hair loss.

Results: With laboratory experiments, we found exosome can stimulate the proliferation of hair follicle, accelerate telogen-anagen transition, and protect hair follicle cells against ROS and androgen.

20 patients (41.9 ± 13.4 years old) were enrolled for in vivo study. Hair density increased from 105.4 to 122.7 counts/cm² ($P < 0.001$), while mean hair thickness increased from 57.5 to 64.0 μ m ($P < 0.001$), after 12 weeks of treatment. None of the patients reported serious adverse reactions.

Conclusion: Exosomes can be an effective and safe alternative therapeutic strategy for hair loss.

