APPLICATION OF MESENCHYMAL STEM CELLS AND THEIR SECRETORY FACTORS FOR HAIR REGENERATION

Aims & Scope:
Human mesenchymal stem cells (MSCs), by virtue of its capability to self-renew and differentiate into a variety of cell types, represent the first pluripotent stem cells (PSCs) to be used in clinical settings related to damage or degeneration. Therefore, there is an urgent need to understand how mesenchymal stem cells and their secretory factors contribute to regenerative medicine. Recently, mesenchymal stem cells from the adipose tissue (ADSCs) and conditioned media of ADSCs (ADSC-CM) are reported to promote hair growth in vitro and in vivo by modulating the follicular cell cycles and hair cycle. Application of the secretory factors in various combinations and various delivery platforms has been tried in hair regeneration, especially in androgenetic alopecia and telogen effluvium. Additionally, we will discuss other advances in the field including the use of novel technologies to support the therapeutic and visualize grafted cells following transplantation. These approaches might mark the first practical application of stem cells among various trials in the field of hair regeneration.

Key words: mesenchymal stem cells; hair regeneration; secretory factors,

Subtopics:
1) Discussing the basic mechanism of hair regeneration by mesenchymal stem cells and their secretory factors in hair loss

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2) Discussing the use of novel delivery platforms to upgrade the therapeutic response in hair regeneration:

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3) Discussing up-to-date knowledge in hair regeneration using the mesenchymal stem cells and their secretory factors in male and female pattern hair loss:

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