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Focus on platelet growth factors, adipose-derived cells and mimicking growth factors in the treatment of hair loss

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Cellular therapies, stem cells and regenerative dermatology applications are rapidly evolving with fast advancements, thanks to new biological knowledge. In this presentation, we will focus on rational and new therapeutic possibilities using platelet rich plasma (PRP), adipose-derived cells (ADC) and mimicking growth factors (mGFs) to treat hair loss and hair cosmetic problems. PRP is an autologous, plasma derived, concentrate, which has recently found use in many areas of medicine. The ability of PRP to stimulate the survival and growth of follicles was studied both *in vitro* and *in vivo*. The mechanism of action of PRP is due to the interaction of platelet growth factors with follicular stem cells, to its anti-inflammatory action and to its immune-modulatory activity in the regulation of expression and chemotaxis of pro-inflammatory cytokines. ADC contains multipotent elements with phenotypic and gene expression profile similar to human mesenchymal stem cells that can stimulate angiogenesis and vasculogenesis, hair stem cells with potential hair regrowth. mGFs are biotechnological synthetic polypeptides in a topic solution that mimic the natural growth factors and that can stimulate anagen phase and control hair loss.

Biography

Fabio Rinaldi, M.D., Ph.D., is dermatologist, head of the Dermatological Centre of Studio Rinaldi & Association, Milan, contract Professor at the University of Sorbonne, Paris and contract Professor at the Master in Trichology at the University of Florence. He is president of the International Hair Research Foundation. He has published more than 20 papers in reputed journals and is chief editor of Human Trichology.

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