

STUDIO SULL'INTEGRAZIONE DELLA PROCEDURA SEFFI  
CON DIFFERENTI TIPI DI ACIDO IALURONICO

# Acido ialuronico e SEFFILLER



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Valutazione del numero, delle caratteristiche biofisiche e multipotenti delle Cellule staminali derivate dal tessuto adiposo raccolte mediante procedura SEFFI e interazione con differenti tipi di acido ialuronico. (2021) A. Gennai, B. Bovani, M. Colli, F. Melfa, D. Piccolo, P. R. Russo, M. T., Clementoni, S. Zia, B., Roda, A. Zattoni . *INTERNATIONAL JOURNAL OF REGENERATIVE MEDICINE*



La combinazione di tessuto prelevato ed emulsionato con acido ialuronico può essere sfruttata per contrastare la perdita di volume e l'invecchiamento cutaneo del viso e del corpo. Questo approccio integrato grazie alla procedura rigenerativa SEFFI rende il trattamento estetico con acido ialuronico un trattamento promettente per la terapia anti-età del viso.



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# Obiettivo dello studio



L'iniezione di cellule staminali autologhe derivate dal tessuto adiposo (ADSC) negli strati dermico e sottocutaneo promette vantaggi rigenerativi portando ad un ringiovanimento. L'acido ialuronico iniettabile (HA) è un filler temporaneo che riduce la comparsa di rughe e pieghe del viso e crea struttura e volume al viso e labbra.



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# Lo studio



Questo studio ha combinato l'innesto di tessuto adiposo microframmentato con il filler di acido ialuronico, utilizzando tre diversi tipi di Acido ialuronico, con e senza procedura di emulsificazione. Nonostante la minore cellularità dai campioni emulsionati combinati con HA, le cellule isolate potrebbero crescere e espandersi in cultura, dimostrando così la loro capacità proliferativa, mostrando “buona qualità” in tutte le condizioni.



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# Risultati



Abbiamo valutato la cellularità del fenotipo mesenchimale (definito come il numero di cellule aderenti con fenotipo mesenchimale per millilitro di tessuto adiposo) e la capacità di differenziazione in vitro in linee mesenchimali.

Le cellule potrebbero differenziarsi verso la tipologia mesenchimale: esprimono marcatori mesenchimali mediante analisi di citometria a flusso e mantengono il loro potenziale di staminalità.

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## Research Article

## Evaluation of the Number, Biophysical and Multipotent Characteristics of Adipose Derived Stem Cells Harvested by SEFFI Procedure and Interaction with Different Type of Hyaluronic Acids

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## ABSTRACT

**Background:** Injection of autologous adipose-derived stem cells (ADSCs) and a stromal vascular fraction (VSF) into dermal and subdermal layers promises regenerative advantages by improving skin volume and rejuvenation. Injectable hyaluronic acid (HA) is a temporary dermal filler that, by improving skin hydration, reduces the appearance of fine lines and wrinkles, facial folds and creates structure and volume to the face and lips. This study combined the grafting of micro fragmented fatty tissue with the hyaluronic acid filler procedure, using three different types of HA.

**Methods:** Each sample of micro fragmented adipose tissue harvested using the superficial enhanced fluid fat injection (SEFFI) technique collected from 8 patients were equally divided into two specimens. One of these (EMU specimens) was emulsified by gently applying ten back-and-forth passages from one syringe to another to fluidify the tissue. The other one was not emulsified (Ctrl/NON-EMU specimen). Both EMU and NON-EMU specimens were divided into four aliquots: one served as control, and the others were combined with each of three tested hyaluronic acids. Afterward, we assessed the cellularity of mesenchymal phenotype (defined as the number of adherent cells with mesenchymal phenotype per milliliter of adipose tissue) and the *in vitro* capacity of differentiation in mesenchymal lineages.

**Results:** Despite low cellularity from emulsified samples combined with HA, isolated cells could grow and expand in culture, thus proving their proliferative ability, showing "good quality" in all conditions (Ctrl/NON-EMU, EMU, and combined with HA). The cells could differentiate towards mesenchymal lineages, express mesenchymal markers by flow cytometry analysis, and maintain their stemness potential.

**Conclusion:** The combination of emulsified harvested tissue with HA products can be exploited to counteract the loss of volume and skin aging of the human face and body. This approach to regenerative aesthetic treatment is a promising treatment for facial antiaging therapy.

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