

Advantages of preconditioning of ASCs by shockwave therapy

Karin Freitag, Manuela Cabrera Freitag, Haris Pipis, Andrea Romero, Miguel Rico, Eva Muñoz Mayoral

DKF, Spain

1. Introduction

Objective: Benefits of preconditioning of ASCs with shockwave therapy

2. Material & Method

Manual fat collection by liposuction to avoid cell trauma and isolation of mesenchymal cells in the laboratory.

Choice of plastic with fine thickness and moldable to favor the direct application of DEFOCUSED SHOCK WAVES (Orthogold), a total of 1000 IMPULSES with 0.2 MJ/mm², 4hz.

4 Groups: Group 1: no shock wave treatment, Group 2: shock waves applied to the stromal vascular

fraction, Group 3: shock waves on liposuction, Group 4: shock waves on enzyme-treated liposuction Comparison between the groups: Cellular viability study with XLSTAT program and application of Friedman's test. Adipogenic and osteogenic differentiation study, Cell growth study (cumulative growth). Study of colony formation. Study of cell migration.

3. Results

Shock waves do not affect the viability of ASCs (no change in cell morphology and power)

Shock waves do not affect differentiation into adipose and osteogenic lineage

Shock waves do not alter the ability of ASCs to form colonies of cellular progenitors

Shock waves IMPROVE CELL GROWTH AND CELL MIGRATION

4. Discussion

Shock waves can be the "link" of mechanotransduction for stimulating cell biology