ABSTRACT

The Patterns Of Wound Around Healing Process Through Expression Analysis of EGF, VEGF, TGFβ1, Collagen Type 1, MMP 1 and Capillaries of Blood Vessel Which is Induced Adipose Derived Mesenchymal Stem Cells (ADMSCs) In Primary Wound

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Objective : To determine the patterns of wound around healing process through expression analysis of EGF, VEGF, TGFβ1, Collagen type 1, MMP 1 and capillaries of blood vessel which is induced Adipose Derived Mesenchymal Stem Cells (ADMSCs) in primary wound.

Material and Methods : A total of 42 experimental animals were devided into six groups: 3 groups of control and 3 groups of treatment. Each group devided to three sampling time, at day 5, 14 and 21 according to the wound healing phase. Each rabbits did full thickness excision 2X2cm on right and left back with 5cm wound spacing. In the treatment group, the right back of the rabbits were given infiltration injection of ADMSCs at $5x10^6$ in 4 directions of the wound. Other wounds are given moist therapy. After observation, all the rabbits were sacrificed and got specimens of the primary wound control, around wound control, between wound control, primary wound treatment, around wound treatment, between wound treatment. All specimens did examine for the expression of EGF, TGFβ 1, VEGF, collagen type I, MMP 1 and capillaries of blood vessels. Results obtained were subjected to comparative test and path analysis.

Results : On day 5,14 and 21 was found green fluorescent of ADMSCs had been labeled with PKH-26 in treated primary wound and treated wound around. There were different pattern of wound healing process that express all variables in the treatment group rather than control group. Induced of ADMSCs to the wound was change of 77,7%, followed by changes in the wound around and the area beetween, had an effect of 55,5% each. When reffering to the elemental changes in the primary wound, the changes that occur in the wound around and the area between the two lesions get the influence of each of 71,4%.

Conclusion : There was migration of ADMSCs to wound around by local infiltration injection in primary wound. Varying patterns were found in primary wound treatment, around wound treatment and between wound treatment for the expression of EGF, TGFβ 1, VEGF, collagen type I, MMP 1 and capillaries of blood vessels. Specifically in primary wound treatment and around wound treatment obtained same pattern on the expresion of MMP 1, VEGF and capillaries of blood vessels. Likewise in the between wound were found same patterns on expression of EGf and collagen type 1.

Keywords: Adipose Derived Mesenchymal Stem cells / Wound / Growth Factor