

## P 20

### THE EFFECTS OF ANTIGENICITY OF ADIPOSE-DERIVED STEM CELLS ON WOUND HEALING

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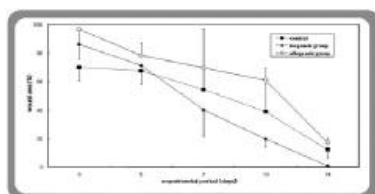
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**Aim:** Adipose-derived stem cells (ADSCs) are multipotent cells which have been found to promote wound healing through angiogenesis and re-epithelialization. The antigenicity of ADSCs is known not to effect stem cell therapy. This study was designed to investigate the effect of antigenicity on wound healing.

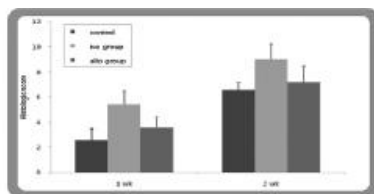
**Methods:** Adipose tissue was harvested from the epididymal fat pads (BALB/c and C57BL/6 mice). 24 mice (BALB/c) were divided into three groups; the isogenic, allogenic and control group. Two full-thickness defects (6mm-diameter) were created on the back.  $1 \times 10^6$  ADSCs from BALB/c mice were applied in the isogenic group. For allogenic group, ADSCs from C57BL/6 mice were applied. 100  $\mu$ l PBS only was in the control group. Digital images were analyzed to assess the change in size. Tissue was obtained for histological analysis including epithelialization, granulation tissue and angiogenesis (7th and 14th day).

**Results:** Wound sizes decreased in all three groups. The isogenic group had a lower rate of wound healing compared to the control group at day 3, but at day 10 and 14, significantly more rapid ( $p < 0.05$ ). Histological findings also revealed in the isogenic group.

**Conclusions:** The antigenicity of ADSCs is generally known not to affect cell therapy. However, when isogenic ADSCs were applied to wounds, they presented a faster rate of wound healing compared to controls. These findings suggest that cell therapy targeted at enhancing wound healing may benefit from the use of ADSCs with identical antigenicity, as opposed to allogenic or xenogenic ADSCs.



The changes of wounds healing of each group for experimental days.



Histologic score of each group at 1 and 2 week.