



DERMATOLOGICAL SURGERY

MSCS INHIBIT VITILIGO PROGRESSION THROUGH PROMOTION OF ROS DETOXIFICATION IN CO-TRANSPLANTATION WITH AUTOLOGOUS MELANOCYTE

Lz Zhu⁽¹⁾ - C Yang⁽¹⁾ - L Zhi⁽²⁾ - L Wu⁽¹⁾

The Sixth Affiliated Hospital Of Sun Yat-sen University, Dermatology And Venereology, Guangzhou, China⁽¹⁾ - Jinan University, Basic Medical College, Guangzhou, China⁽²⁾

Introduction: Vitiligo is a disfiguring disease with great social impact but the therapy options are limited. Current surgical treatments involve a large skin biopsy and yet some patients responded poorly to these treatment.

Objective: In pursuit of more efficient surgical treatment and to determine how mesenchyma stem cell (MSCs) and melanocyte exhibit crosstalk in vitro.

Materials and Methods: The study follows the Ethical guidelines and was confirmed by the institutional review committee. Patients diagnosed with stable vitiligo for more than 6 months were recruited. The normal pigmented skin was selected as donor area and approximately one fifth the size of recipient area. The recipient area was pretreated with carbon-dioxide laser abrasion and then pure melanocytes and MSCs were planted onto the donor area at a ratio of 1:1. Transplanting the melanocytes alone was a control group with both done in the same patient. The circumcised skin was collected to generate primary melanocytes. Cell counting kit-8 (cck8), western blot, ROS assay kit were used to determine the effect of MSCs to melanocytes.

Results: 10 anatomical lesions underwent the treatment for each procedure. 8 of 10 lesions in co-transplantation group showed more than 75% repigmentation, while 6 of 10 in control group. The CCK8 method showed that the proliferation rate of co-culture group was significantly higher than that of the control group. The apoptotic rates, apoptotic protein and intracellular ROS level of co-transplantation group was significantly lower than that in the control group.

Conclusions: In vivo, we have preliminarily proved that co-transplanting MSCs and melanocyte has a remarkable effect on repigmentation. Our research in vitro shows that MSCs promote ROS detoxification in melanocyte, though, more well designed experiments need to be done to explore the mechanism.

