ABSTRACT

TITLE: Hypoxic preconditioning of adipose tissue drived stem cells to enhance their skin rejuvenation potential.

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BACKGROUND: One of the most visible signs of aging in humans are age related changes in skin (wrinkles, pigmentation, loss of skin elasticity and tone, fragility of skin and purpura due to weakness of vessels) that are subject of aesthetic and cosmetic procedures. Recently stem cells based therapies are gaining exceptional attention for skin rejuvenation due to their anti-aging potential. However, potential of stem cells may be compromised with age of donor. The current study therefore aims to develop a preconditioning strategy in order to augment the skin rejuvenation potential of aged stem cells.

Theo objective of this study was to evaluate the effect of hypoxic preconditioning on anti-aging potentials of aged mesenchymal stem cells (MSCs)

After obtaining the fat sample crude lipoaspirates was processed to isolate mesenchyaml stem cells by enzymatic digestion. The isolated cells were plated in culture flasks that were incubated at 37°C / 5% CO2 with humidity. Aged MSCs were propagated under normoxia and hypoxia. MSCs were compared in term of their growth characteristics, differentiation assay, in vitro wound healing, in vitro angiogenic assay and gene profiling. Further, in vitro model of skin aging was developed to check the effect of hypoxic preconditioning after transplantation of aged MSCs .

RESULTS . Hypoxic preconditioning enhanced the skin rejuvenation potentials of aged stem cells. Statistical results will be presented in the conference as this is an ongoing study.

KEY WORDS : Hypoxic preconditioning, adipose tissue derived stem cells, skin rejuvenation

BIOGRAPHY

Dr. Bushra Bashir work as Assistant Professor, Dermatology. She completed her MBBS from King Edward Medical University, Lahore which is one of the prestigious institute of the country that cater the top 200 students of the province per year. She did her fellowship in Dermatology from College of Physicians & Surgeons Pakistan. Remained the Laser & Phototherapy Incharge of the Department. Currently working in tissue engineering and regenerative lab with special interest in adipose derived mesenchymal stem cells and their skin rejuvenation potential.

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