



Abstract

## Adipose-Derived Stem Cells and Platelet-Rich Plasma: inputs for Regenerative Medicine treating Osteoarthritis.in Clinical trials

Rubina Ghani

Musavvir Stem cell Clinic,, Pakistan

### Abstract:

#### Introduction:

In the last few decades, thousands of patients have benefited from platelet rich plasma (PRP) therapies, emerging as a safe alternative in many different medical fields. The use of Platelet-Rich Plasma (PRP) in medicine has become increasingly more widespread during the last decade. Regenerative medicine and tissue engineering have the aim of restoring function due to tissue damage or organ failure. This goal can be achieved either by stimulating endogenous stem cells or by providing exogenous stem cells along with growth factors. Among the different sources and types of stem cells, particular attention has been given to adipose tissue-derived mesenchymal stromal cells (ADSCs). The use of ADSCs as source of adult stem cells offers numerous advantages: the collection technique is easier and less invasive than with bone marrow; these stem cells show a high proliferative rate in vitro and are endowed with multi-differentiative capability and tissue repair properties

**Material & Method:** 15 cc blood sample was collected from the patient. The base line parameters included complete blood count (CBC), erythrocyte sedimentation rate(ESR), fasting blood sugar/random blood sugar(FBS/RBS), urea, creatinine, uric acid, RA factor Calcium, Phosphate, vitamin D, CRP and knee joint X-Ray. In case of diabetic patients the HbA1c was performed. The PRP and Stromal vascular fraction both were then placed in Adilight 2 for the activation of PRP for 20 minutes.

**Result :** In base line reports it was noted elevated , with ESR., CRP and in some cases uric acid was elevated. The vitamin D ,level and calcium was low. The sugar level, urea, and creatinine normal range. The patient underwent four consecutive platelet-rich plasma therapy with a gap of 30 days



Musavvir Stem cell Clinic

in between and one ADSC therapy. We assessed the patients by taking the repeating the parameters which were elevated before the second, third and fourth treatment. After the second therapy, the patient reported marked control in pain and could sleep nicely without taking pain killer. She could easily walk and do her work without any help and was quite satisfied with the treatment, because there was no medication.

**Conclusion :** This study suggests the use of platelet-rich plasma and ADSC has a beneficial effects on knee joint pain and can thus be attributed to various platelet-derived growth factors causing improvement in the back pain, and promotion to decrease in ESR and changes in x-ray. It is safe, cheap, and non-allergic.

**Keywords:** Osteoarthritis, knee joint pain, pain management, Platelet rich plasma, separation, principles, standardization

### Biography:

Dr. (Miss) Rubina Ghani d/o (Late) Abdul Ghani Musavvir. Educational Qualification: done MSc.& Ph.D. topic "Biochemical studies in the patients with hemoglobin Abnormalities"

Teaching Experience: Baqai Medical University and joined as Assistant Professor in October 2005 and Resigned as Professor in December 2015. joined in 2016 Jinnah Medical & Dental College as Professor and Head of Department till now. Dadabhoj Institute for Higher Education in December 2015 as visiting faculty till now. Presented Poster on National/ International (15), Paper National/ International (27). Publication National/International (43), Under publication in international (accepted) 02.

Workshops Attended: National/International (10). Workshops Arranged. National (09). HEC Approved supervisor 2014, Under my supervision M.Phil 06 Ph. D 02, Visiting Supervisor Zaiuddin University

&Hamdard University, BASR Member at HamdardUniversity (Eastern Medicine)Field of interestInherited diseases, infectious diseases, and stem cell therapy

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