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Comprehensive regenerative therapies with bone marrow stem cell, platelet rich plasma injections to treat severe osteoarthritis and torn rotator cuff tendons: preliminary findings from a clinical study of 19 patients

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Overview: To evaluate the clinical outcomes of comprehensive regenerative therapies with Mesenchymal Stem Cells (MSCs) from bone marrow, Platelet Rich Plasma (PRP) and dextrose prolo-solution injections to treat patients with persistent joint pain and severe osteoarthritis at an outpatient regenerative medicine clinic.

Introduction: Ligament laxity and cartilage degeneration are known to be root causes of osteoarthritis. Comprehensive regenerative therapies with the combination of dextrose prolotherapy, PRP and autologous stem cell injections into the pathologic joint and surrounding weakened tendon and ligaments are effective in improving pain and overall function in all degrees of osteoarthritis. In this study from an outpatient clinic, MSCs from bone marrow aspirate with PRP and dextrose prolotherapy were used for 19 patients (14 male, 5 female, age from 30-70 years old) from Sept. 2016 to August 2017. Among them, 18 patients had severe degree of degenerative joint disease/osteoarthritis; one had severe shoulder pain from rotator cuff tendon tears. All of them failed with traditional treatments and then selected for alternative treatments to surgeries. Treatments were made with one time PRPs and MSC bone marrow stem cells injections to 20 knees, 1 shoulder, 1 ankle and 2 hip joints, respectively under imaging needle guidance. Outcomes included the changes in VAS pain scale, upper or lower extremity functional scale, X-rays and measurements from musculoskeletal ultrasound pre- and post-treatments.

Results: After 2-6 months post initial treatments, data was collected in 18/19 patients. There were an average of 58.2% pain reduction at VAS pain scale and 46.7 % improvement in functional scales. X-ray improvements seen in 2 out of 3 patients. Over 90% patients showed varies degree of new soft tissue growths from musculoskeletal ultrasound exam comparisons. No adverse reactions or complications were observed in all patients.

Discussion and Conclusions: Comprehensive regenerative therapies, as above, are new cutting-edge treatment compared to the alternate invasive orthopaedic surgeries after failure of other traditional standard-of-care treatments. Bone marrow stem cell aspiration and subsequent joint injections with added PRP and dextrose prolotherapy are safe, cost-effective and relatively low-risk for patients with persistent joint pain and arthritis caused by torn tendons, ligaments ligament laxity and degenerative cartilages. For moderate to severe degree of joint pain and arthritis, we would recommend more rounds of regenerative therapies to improve the results. Further clinical studies are warranted to evaluate the long-term benefits.

Biography

Yibing Li the Founder and President of Midwest Joint Pain Institute and Centre for Pain Management & Rehab, is an interventional Physiatrist. She is American board certified in physical medicine and rehabilitation, pain medicine and small fiber nerve conduction studies. She graduated from Shenyang Medical College in China and completed residency at BJH/Washington University School of Medicine at St. Louis. She has over 12 years of clinical experience in spine and joint pain management. She has special interest and extensive training in regenerative medicine and is one of frontiers in performing prolotherapy, PRP, amniotic allograft tissue and bone marrow stem cell therapies in the United States.

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