Human amniotic allograft tissue matrix with platelet rich plasma injections and prolotherapy to treat chronic knee pain and severe osteoarthritis.

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Description

Osteoarthritis (OA) originates from ligament laxity, tendinopathy, cartilage degeneration, and previous joint injuries and can result in functional limitations and chronic pain. Treatment include a mixture of human amniotic allograft tissue and plasma rich plasma (PRP) alongside dextrose prolotherapy. The human amniotic allograft tissue is extracted from a healthy, living donor and contains protein collagens, growth factors, and receptor antagonists. PRP contains additional growth factors, and dextrose prolotherapy is used to stimulate the body for regeneration of the tissue. This study is to assess the clinical outcome of the human amniotic tissue and PRP alongside prolotherapy on the pain and function of the patients.

102 patients were treated for degenerative joint disease/OA and were selected from September 2015-Novermber 2017. Patients were of 38-92 years, 56 males and 44 females, and severe degenerative joint disease/OA was confirmed via X-ray. Treatments include the mix of human amniotic allograft tissue and PRP with prolotherapy under ultrasound guidance to the patellar tendon, Medial collateral ligament, Lateral Collateral Ligament, and the knee joints. Results were shown on the VAS pain scale: (1-10) with 10 being the greatest pain and 0 being no pain, and the lower extremity 80-point functional scale: (the larger the number, the more function the patient has). Data was gathered before treatment and 2 months after during follow-up. Statistical significance was calculated for the difference shown for both scales using a paired-t test at a significance of (alpha=0.05).

For the pain scale, a sample size of 99 was used due to lack of follow up information necessary. There was a mean of 1.91 decrease of pain after the treatment with a standard deviation of 2.02 for the differences between the before and after. With a t-score of 9.42359, the null hypothesis was rejected, so sufficient evidence to conclude the treatment does decrease the pain caused by DJD/OA at alpha of 0.05. For the lower extremity 80-point functional scale, a sample size of 98 was used due to same reason for the pain scale. There was a mean of 8.14 increase in functions seen in the patients after the treatment with a standard deviation of 13.95. Comparing the t-score of 5.77796 to the alpha of 0.05, there is sufficient evidence to conclude that the treatment does indeed increase the functionality for the patients with DJD/OA at the knee(s).

Comprehensive regenerative therapies as above are safe, effective, non–invasive treatment options for patients with chronic knee pain from severe osteoarthritis. They are potentially served as alternatives to the total knee replacement surgeries for patients who failed other conservative care. Further treatments are recommended to some patients and continuous clinical studies are warranted to evaluate the long-term benefits.

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