have a high risk of complications. SI/BW is useful for preoperative risk assessment of patients. In conclusion, SI/BW, which can be evaluated only by blood sampling, is simple and useful, and the results can be used for patient evaluation, efficient intervention, and risk management.

Category: Knee - Osteoarthritis

**An Examination of the Frequency of Central Sensitization in Patients with Knee Osteoarthritis with Chronic Pain and its Association with Patient-Reported Outcome Measures**

**Abstract ID# 22491**
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**Summary:**
Examination of correlation between Central Sensitization and PROMs

**Data:**
Objective Chronic pain associated with knee osteoarthritis (KOAl) has been shown to involve not only nociceptive pain but also peripheral and central nerve sensitization. However, there are few reports comparing central sensitization (CS) to the severity of deformity, versus patient-reported outcome measures (PROMs) and we aim to investigate these relationships. Methods 79 KOA patients (male/female=30/48, mean 63.6 ± 11.8 years, KL2/3/4=29/28/21) who first visited our hospital between June and July 2022 with chronic knee pain refractory to conservative treatment were included in the study, and PROMS and CS were assessed by a self-administered questionnaire (Central Sensitization Inventory [CSI]). The severity levels were divided into the following point categories: subclinical (0-29 points), mild (30-39 points), moderate (40-49 points), severe (50-59 points), and extreme (60-100 points). A CSI score of 30 or higher was defined as having CS. The correlation between CSI score and KL classification, tibiofemoral angle (FTA), % mechanical axis (% MA), Visual Analog Scale (VAS), Knee injury and Osteoarthritis Outcome Score (KOOS), Japan Knee Osteoarthritis Measure (JROM) was examined. Statistical analysis was performed using SPSS ver.28 with Spearman's rank correlation coefficient. Comparison among the three groups was performed by one-way ANOVA, followed by post-hoc test using the Tukey-Kramer method. The significance level was set at 5%. Results The mean CSI score was 20.1 ± 10.4. CS occurred in 16.7% of patients (CSI score ≥ 30), the quantity of subclinical/mild/ moderate patients was 11/1/1 respectively. KL2, KL3 and KL4 patients had CS in 3 (10.3%), 5 (17.8%), and 5 (23.8%) patients. There were no significant differences between the groups (p = 0.45). FTA and %MA showed no correlation with the CSI score (p = 0.74/0.68). VAS, KOOS-ADL, KOOS-QOL, KOOS-pain, JROM and CSI scores were significantly correlated (r = 0.24, p = 0.03/r = 0.48, p < 0.01/r = 0.26p = 0.02/r = 0.31, p < 0.007/r = 0.41, p < 0.001). Only KOOS symptom did not correlate with the CSI score (p = 0.05). Summary and Discussion Our findings indicate that there was a correlation between CSI and PROMs, but not with KOA severity or lower limb alignment. 16.7% of KOA patients had CS, but it has been reported that KOA patients with CS often have persisting residual pain after operations such as joint replacement surgery. In conclusion, it is necessary to evaluate not only PROMs but also CSI in patients with chronic pain to determine a correct treatment plan.

Category: Knee - Osteoarthritis

**Successful Isolation Of Viable Stem Cells From Cryopreserved Microfragmented Human Abdominal Adipose Tissue From Patients With Knee Osteoarthritis**

**Abstract ID# 22421**
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Summary:
Viable stem cells can be successfully isolated and expanded from cryopreserved microfragmented adipose tissue using both tissue explant culture and enzymatic digestion.

**Data:**
Background: Microfragmentation is a new non-enzymatic, mechanical one-step procedure to process stem cells from adipose tissue (AT) for usage directly in the operation theatre. Treatment of knee osteoarthritis with autologous stem cells from microfragmented AT has shown promising results. Cryopreservation and biobanking of stem cells are becoming increasingly important for research purposes, treatment of aged patients, and for repetitive treatments to improve long-term outcomes without the need for additional liposuctions. Isolation of viable stem cells from cryopreserved whole liposapirates have been described, but not from cryopreserved microfragmented AT. Aim: To investigate if viable stem cells could be isolated and expanded from cryopreserved microfragmented AT harvested from knee osteoarthritis patients by two different isolation methods; (1) tissue explant culture (TEC), and (2) enzymatic digestion (ED). Materials and Methods: Microfragmented subcutaneous abdominal AT from knee osteoarthritis patients was cryopreserved in cryomedium containing 10% dimethyl sulfoxide (DMSO) protocryoprotectant at -80 degrees Celsius. The samples were thawed and rinsed for stem cell isolation by TEC (non-enzymatic) and ED (with 1 mg/ml collagenase type 1), respectively. Viability, population doublings, and doubling time was assessed by trypan blue staining. Cell type and senescence-associated ß-galactosidase activity were measured by flow cytometry. Osteogenic and adipogenic differentiation was assessed quantitatively by Alizarin Red S and Oil-Red-O staining, respectively. Statistical analysis was performed using paired t-tests. Normality of data was confirmed using Shapiro-Wilk tests and QQ-plots. p-values < 0.05 were considered statistically significant. Results: Microfragmented AT from 7 patients (5 females and 2 males, age 41 to 63 years) was cryopreserved for a period of 46-150 days (mean (SD) 115.9 days (44.3 days)). Viable stem cells were successfully recovered and expanded from all patients using both isolation methods with no significant difference in viable population doublings or doubling time from passage 1 to 3 (p > 0.05). Low levels of senescence-associated ß-galactosidase activity was detected for both methods. Stemness was verified by cell stem surface markers and osteogenic and adipogenic differentiation performance. Adventitial stem cells (CD31-/CD34+ /CD45-/CD90+ /CD146-), pericytes (CD31-/CD34-/CD45-/CD90+ /CD146-), transitional pericytes (CD31-/CD34-/CD45-/CD90+ /CD146-), mesenchymal stem cells (CD34-/CD45-/CD90+), and CD271+ stem cells (CD31-/CD34+/CD90+ /CD271+) were identified using both methods. More pericytes were present when using TEC (25% (24%)) compared to ED (2% (2%)) at passage 4 (p = 0.04). Conclusion: Viable stem cells can be isolated and expanded from cryopreserved microfragmented AT using both TEC and ED. The TEC isolation method provides more clinically relevant pericytes than ED. For research purposes, the TEC method is believed to be more representative of treatment with microfragmented AT as no enzymes have been applied.

Category: Knee - Osteoarthritis

**Availability and Price Variation in Platelet-Rich Plasma Injections at Top Ranked Orthopedic Centers in the U.S**

**Abstract ID# 22499**
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Summary:
This is a prospective study investigating geographic variation in availability and pricing of platelet-rich plasma injections for knee osteoarthritis.

**Data:**
Background: Demand for costly cash-pay platelet-rich plasma (PRP) injections for knee osteoarthritis (OA) has dramatically increased in recent years despite a lack of consensus on its efficacy. This off-label use is not covered by insurance and patients often pay ~$700 per PRP injection, generally administered in a series of 3. Given increasing demand for PRP, hypothesized price...