

**Conclusions:** Using an objective computerized technique, our study demonstrated a higher fall risk in patients with KOA than in healthy individuals. This higher risk was shown even in the early radiographic phases of the disease related to age, pain, and dysfunction. An understanding of factors on postural control seems to be critical in successful fall prevention in these patients.

**Disclosure of Interest:** None declared

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### AB0810 CORRELATION BETWEEN KNEE EXTENSOR MUSCLE STRENGTH AND GAIT ENDURANCE AFTER TOTAL KNEE ARTHROPLASTY

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**Objectives:** This study was undertaken to identify the relationship of objective physical performance and gait endurance after 1 month after total knee arthroplasty.

**Methods:** One-hundred ninety-five patients (32 males and 163 females; average age 72.6±6.1 years) who underwent a primary total knee arthroplasty (TKA). Patients completed 6-minute walk test (6MWT) to assess gait endurance. Additional physical performance test including timed up and go (TUG) test, timed Stair Climbing Test (SCT), instrumental gait analysis for spatio-temporal parameters, and isometric knee flexor and extensor strength of the surgical and nonsurgical knees 1 month after TKA were measured. To evaluate self-reported physical function, self-reported disease-specific physical function measured by using the Western Ontario McMaster Universities Osteoarthritis Index (WOMAC) and self-reported quality of life measured by using EuroQOL five dimensions (EQ-5D) questionnaire. Visual analog scale (VAS) of post-operative knee pain was recorded each patient.

**Results:** In the bivariate analyses, the postoperative gait endurance had a significant positive correlation with the postoperative gait speed ( $r=0.48$ ,  $p<0.001$ ), cadence ( $r=0.40$ ,  $p<0.001$ ), stride length ( $r=0.58$ ,  $p<0.001$ ), postoperative peak torque (PT) extensor of surgical knee ( $r=0.36$ ,  $p<0.001$ ), postoperative peak torque (PT) flexor of surgical knee ( $r=0.25$ ,  $p<0.001$ ), postoperative peak torque (PT) extensor of non-surgical knee ( $r=0.49$ ,  $p<0.001$ ), postoperative peak torque (PT) flexor of non-surgical knee ( $r=0.34$ ,  $p<0.001$ ), EQ5D ( $r=0.33$ ,  $p<0.001$ ) and a significant negative correlation with TUG ( $r=-0.46$ ,  $p<0.001$ ), SCT-ascent ( $r=-0.63$ ,  $p<0.001$ ), SCT-descent ( $r=-0.68$ ,  $p<0.001$ ), WOMAC pain score ( $r=-0.29$ ,  $p<0.001$ ), WOMAC stiffness score ( $r=-0.35$ ,  $p<0.001$ ), WOMAC function score ( $r=-0.43$ ,  $p<0.001$ ).

In the linear regression analyses, the postoperative Visual analog scale (VAS) ( $\beta=-6.91$ ,  $p=0.03$ ), peak torque (PT) extensor of surgical knee ( $\beta=0.56$ ,  $p=0.04$ ) and peak torque (PT) extensor of non-surgical knee ( $\beta=0.77$ ,  $p<0.001$ ) were factors predictive of the postoperative 6MWT.

|   | Correlation coefficients (r) |
|---|------------------------------|
| TUG (sec)   | -0.48*                       |
| SCT (sec)   |                              |
| Ascent (sec)  | -0.63*                       |
| Descent (sec)   | -0.68*                       |
| Gait parameter  |                              |
| Gait Speed (m/sec)  | 0.48*                        |
| Cadence (steps/min)   | 0.38*                        |
| Stride length (cm)  | 0.23*                        |
| Gait cycle duration (sec)                                   | -0.03                        |
| Stance phase duration (% of gait cycle)                     | -0.11                        |
| Swing phase duration (% of gait cycle)                      | 0.11                         |
| Double support duration (% of gait cycle)                   | -0.02                        |
| Single support duration (% of gait cycle)                   | -0.01                        |
| Strength <sub>max</sub> (NM)                                |                              |
| PT extensor of surgical knee (N·m·kg <sup>-1</sup> ·BW)     | 0.36*                        |
| PT flexor of surgical knee (N·m·kg <sup>-1</sup> ·BW)       | 0.25*                        |
| PT extensor of non-surgical knee (N·m·kg <sup>-1</sup> ·BW) | 0.49*                        |
| PT flexor of non-surgical knee (N·m·kg <sup>-1</sup> ·BW)   | 0.34*                        |
| Deficit of extensor (%)                                     | 0.12                         |
| Deficit of flexor (%)                                       | 0.13                         |
| ROM (degrees)   |                              |
| Knee flexion (°)  | 0.08                         |
| EQ-5D   | 0.33*                        |
| WOMAC   |                              |
| Pain  | -0.29*                       |
| Stiffness   | -0.35*                       |
| Function  | -0.43*                       |

\*Values represent correlation coefficients (r)

\* $p<0.05$ , \*\* $p<0.01$

Abbreviations: 6MWT, 6-minute walk test; TUG, timed up and go; SCT, timed stair climbing test; PT, peak torque; ROM, range of motion; VAS, Visual Analog Scale; WOMAC, Western Ontario McMaster Universities Osteoarthritis Index; EQ-5D, EuroQOL five dimensions.

**Conclusions:** This study demonstrated that quadriceps muscle strength significantly influenced on gait endurance 1 month after TKA. Using variables measured

after surgery, it may be possible to predict with good accuracy for postoperative gait speed. In addition, these results could be of importance in determining effective rehabilitation strategies focusing on resistance training for improvement of gait speed early after TKA.

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### AB0811 HYALURONIC ACID INTRA-ARTICULAR INJECTION VERSUS ORAL ATORVASTATIN IN THE TREATMENT OF KNEE OSTEOARTHRITIS

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**Background:** Osteoarthritis is a degenerative joint disorder of articular cartilage and is the most common type of arthritis in the elderly. Some studies have suggested that Hyaluronic acid<sup>1</sup> and atorvastatin<sup>2</sup> may have a role in the treatment of osteoarthritis.

**Objectives:** The purpose of the present study was to investigate and compare the potential effects of Hyaluronic acid and Atorvastatin on the symptoms of knee osteoarthritis.

**Methods:** We conducted an open, randomized, parallel study on patients with knee osteoarthritis. Eligible patients were those who met the ACR criteria of primary knee osteoarthritis, radiologically ascertained grade I or II of knee osteoarthritis on the Kellgren-Lawrence scale, had a pain score  $\geq 60$  (maximum 100) and age 50–70 years. Patients are not eligible if they had secondary osteoarthritis, systemic disease like diabetes, history of inflammatory arthritis, severe knee deformity (varus or valgus  $>50$  degree), history of coagulopathy, severe cardiovascular disease, and active infections. Patients were enrolled from outpatient clinic of Imam Reza Hospital, Mashhad, Iran. We divided them randomly into two groups; Group 1 (n=35) received intra-articular Hyaluronic acid each week for three weeks, and group 2 (n=35) received oral atorvastatin 40 mg/day orally for six months. Symptoms were assessed by the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC) at baseline and every month up to 6 months.

**Results:** Twenty eight patients (40%) were male and 42 patients (60%) were female. There was not a significant difference between 2 groups regard to sex ( $P=0.626$ ). Mean age of patients was 57.9±1.1 years. Groups mean age did not differ significantly ( $P=0.710$ ). The pain and function scores were significantly decreased only in the Hyaluronic acid group in the second month ( $P<0.001$ ). There was not any significant improvement in any group in the next months (figure 1).

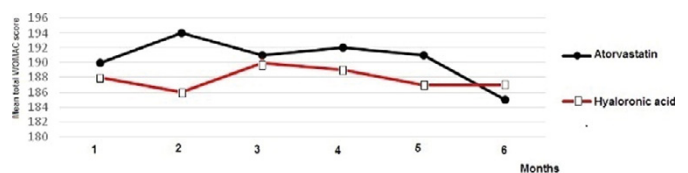


Figure 1 Mean total WOMAC score during the interventions in the studied patients

**Conclusions:** Intra articular Hyaluronic acid improved the pain and function of patients with knee osteoarthritis in the second months after injection. Atorvastatin did not have any effect on the knee osteoarthritis symptoms during 6 months.

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### AB0812 DIFFERENTIATED APPROACH TO THE TREATMENT OF OSTEOARTHRITIS WITH COMORBIDITIES

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**Background:** A significant prevalence of osteoarthritis (OA), the most disability joint disease in the world, which is important in the search for the new treatment. Analysis of modern therapy of OA was the reason for research efficacy of NSAIDs and SYSADOA on biochemical, inflammatory and immunological signs in the treatment of OA.

**Objectives:** Differentiated approach to the treatment of OA depending of presence of hyperuricemia.

**Methods:** 176 patients (144 women, 32 men) was examined, aged (59,71±0,86) years with confirmed radiographic OA according to Kellgren and Lawrence scale. Division into groups was performed depending on treatment. For 14 days group 1 (n=30) received nimesulide 100 mg twice daily, and group 2 (n=30) - meloxicam