self-report of HN presence for the prediction of radiographic knee OA incidence (development of Kellgren-Lawrence grade≥2) and progression (worsening medial joint space narrowing score≥1). Covariate adjustments relevant to OA outcomes were performed.
Results: Presence of HNs (64% of subjects) at baseline physical-examinations, but not subjective self-report of HN, was a predictor of radiographic knee OA incidence (hazard ratio (HR), 95% confidence interval: 1.19(1.001–1.402)). Each additional HN in physical examinations was predictive of OA incidence (HR: 1.03(1.000–1.054)) and progression (HR: 1.04(1.016–1.063)). OA incidence and progression were predicted by HNs located on the 3rd digit (HR: 1.26(1.068–1.487) and 1.18(1.019–1.361), respectively). HN symmetry was predictive of OA incidence (Model-1, HR: 1.09(0.997–1.185)) and progression (Model-2, HR: 1.13(1.035–1.234)).
Conclusions: HNs number, their locations, and symmetry were predictors of knee OA incidence and progression over 8-years.

493
PATIENTS GENOTYPE AND OA TREATMENT EFFICACY

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Purpose: To determine the influence of genetic factors (genotyping of FDPS,LCT,VDR) on the efficacy of standard and modified (with use of the PAP) treatment in the early stages of knee OA.
Methods: The WOMAC index and the frequency of genotype variants for the FDPS,LCT and VDR genes were studied in 96 patients (57 women, 38 men, 41.7 ± 1.2 years old) with primary knee OA (X-ray stage I-II). All patients had OA exacerbation with no clinical evidence of synivitis. Enrolled patients were divided into 2 groups: the first group consisted of 49 patients (27 women, 22 men, mean age 41.7 ± 1.2 years) who agreed to receive standard OA treatment (NSAID, exercises, orthopaedic devises – as needed) and 3 intra-articular PAP injections (2 courses in 12 month, plasma volume 12-15 ml/course, total platelet count per injection $1260{,}24 \pm 22{,}1 \times 10^9$). The second group-47 patients with OA who received standard treatment. Both groups were comparable by age, gender, body mass index and initial WOMAC. Genetic parameters and its influence on OA course and treatment efficacy was analyzed during 12 months of supervision.
Results: The earliest age (37.2 ± 2.01 years) of clinical manifestation of knee OA was connected to homozygous genotype variants: LCT (relative risk 6.3: 1), FDPS (relative risk 6.5: 1) and VDR (relative risk 6.8: 1. The best positive WOMAC changes was determined in patients with the CC genotype of LCT both in first and second groups. The WOMAC index showed lower treatment efficacy in patients with CC genotype of FDPS and VDR in both groups, but results of pationets who received PAP were better and their remission was longer (in 1.7 times) than in the standard treatment group.
Conclusions: The age of first OA clinical signs and the treatment efficacy (both standard and with the use of platelet autologous plasma) has genetic predisposition.

494
A VALIDATION STUDY OF THE ARABIC VERSION OF THE OXFORD KNEE SCORE FOR USE IN END STAGE KNEE OSTEOARTHRITIS

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Purpose: Introduction: The Oxford knee questionnaire (OKS) is a reliable, valid and responsive assessment tool for knee osteoarthritis patients. However, the Arabic version of the OKS (OKS-Ar) has not been fully validated, with the only published work being limited to male patients, with no assessment of responsiveness following total knee arthroplasty (TKA).
Aim: To explore the reliability and validity of the OKS-Ar in both male and female patients with end-stage knee osteoarthritis, including an assessment of responsiveness following TKA.
Methods: From March to October 2017, patients on the waiting list for TKA at our institution, whose main language was Arabic, were invited to take part in the study. Demographic data was collected and patients were requested to complete the OKS-Ar, along with the Arabic version of the Knee Osteoarthritis Outcome Score (KOOS-Ar) and a Visual Analogue Scale for Pain (VAS-*P*), with high scores associated with greater pain. After 7–10 days, the patients were asked to complete a second round of repeated measurement questionnaires. The same measures were repeated again 6 months following TKR.
Results: A total of 100 patients waiting for TKA were recruited. Eighty female and twenty male patients, mean age of 60 ± 7 years (range, 43–81) and 69 ± 8 years (range, 54–85) years, respectively. All participants completed all questionnaires without difficulty at all three time points.
Reliability. The reliability of the OKS-Ar was excellent (ICC 0.96 – 0.98). The Bland-Altman's limits of agreement revealed no significant bias, with a standard error of measurement of one point (minimum detectable clinical change is three points). There was no significant difference between test and re-test mean scores, $P = 0.90$. Spearman's *rho* correlation between the two OKS-Ar measurements was highly significant, $r_s = 0.94$, $P<0.001$. OKS-Ar showed excellent internal consistency, with all values of Cronbach's $\alpha = 0.98$. There was no ceiling effect before TKA and only a 2% ceiling effect was found following TKA, with only two scores above 42. There was no floor effect before or after TKA.
Validity. The OKS-Ar pain component showed a significant strong positive correlation with the KOOS-Ar pain component, rs = 0.73, and moderate correlation with symptoms, rs = 0.63. However, it showed a weak negative correlation with VAS, rs = −0.48; as the VAS-*P* score increases, the OKS-Ar pain component decreases. The OKS-Ar functional component showed a significant strong positive correlation with the KOOS-Ar Activities of Daily Living subscale, rs = 0.68, a moderate positive correlation with the Quality of Life subscale, rs = 0.62, and a weak positive correlation with the KOOS-Ar symptoms subscale, rs = 0.33 (all $P<0.01$). However, no correlation was found between OKS-Ar functional components and the sport and recreation subscale of the KOOS-Ar.
Responsiveness. A statistically significant improvement of 30 (95% CI 20; 17) points for OKS-Ar was observed 6 months after TKA ($P< 0.01$). The effect size of OKS-Ar 6 months post-TKA was large 3.09.
Conclusions: This is the first study to explore the reliability, validity and responsiveness of the Arabic version of the Oxford Knee Score in both male and female patients. The results of this study are similar to those for both the original English OKS and other official translated languages. We found that the measure can be used to assess pain and function in individuals with end stage osteoarthritis of the knee, whose main language is Arabic.

495
THE INFLUENCE OF METABOLIC DISORDERS ON X-RAY CHANGES IN PATIENTS WITH OSTEOARTHRITIS AND THE METHOD FOR THEIR PREDICTION

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Purpose: To investigate the influence of metabolic syndrome indicators on X-ray manifestations of OA and to develop a mathematical model for determining the severity of X-ray changes, depending on metabolic manifestations.
Methods: 63 patients with OA (14 males, mean age 58.0 ± 0.82) with different phenotypes were examined in the Kharkiv Regional Hospital. The plan of examination included the following data: history of the disease, waist circumference (WC), fasting plasma glucose (FPG), glycosylated hemoglobin (HbA1c), immunoreactive insulin (IRI), HOMA-IR, total cholesterol (TC), low-density lipoprotein cholesterol (LDL). The knee X-ray was performed for all patients. The first stage of X-ray changes was determined in 8% of the patients, the second stage – in 58.7% and the third stage – in 33.3% of the patients respectively. Patients were divided into 2 groups: 1st – patients with stages I and II by Kellgren and 2nd – patients with stage III by Kellgren. The following indicators were selected as the most statistically significant: the level of FPG (mmol/l), HbA1C (%), LDL (mmol/l), WC (cm) and duration of type 2 diabetes mellitus (T2DM). The calculation of the criteria was carried out