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Early diagnosis of knee osteoarthritis to enable non-pharmacological treatment

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Introduction: Osteoarthritis (OA) is a leading cause of morbidity and disability carries high socioeconomic costs. With increasing obesity and age in the population, a massive rise in morbidity and costs attributed to OA is expected. New concepts of early diagnosis and treatment of early OA conditions may improve outcomes and reduce disability and costs for OA, the most prevalent form of arthritis.

Methods: The baseline data for 560 participants of the Estonian early knee OA cohort, 70 arthroscopic patients and 50 arthroplasty patients were used. Patients underwent a physical examinations (4 tests recommended by OARSI), self registrated KOOS questionnaire and radiographic examination patellofemoral (PF) and tibiofemoral (TF) joints of both legs. Also some biomarkers (COMP. hs-CRP, u-C2C, IP10; TIMP2:TIMP4) were used. Follow-up data over a period of 9 years of cohort study and 1-3 years after arthroscopy and arthroplasty were used.

Results: During the 9 year follow-up period of early OA non-linear course of the disease was demonstrated. The functional ability of lower limb expressed by 4 functional tests and KOOS decreased slowly. Clear gender differences were demonstrated in disease progression. Using biomarkers (IP10; TIMP2, TIMP4) in OA radiographic Grandes 0-I promise more early detect the disease progression speed. The u-C2C values were significantly higher for patients with tibial or femoral lesion degree 2 or higher both at baseline and 3 yrs. after arthroscopy. Excretion of u-C2C correlated positively with knee symptoms as well as with limitations of everyday and demanding recreative (Sp/Rec) activities ($p<0.0000$). Higher output of u-C2C correlates with decline of the functional abilities of lower limb.

Conclusions: Self registrated KOOS questionnaire and measured functional ability of lower limb demonstrated good practical value in different knee OA Grades, in different patient groups and in different time points The main radiological features of KOA could be described by a restricted number of key BMs involved in tissue remodeling by TIMP/MMP and the TGF system. Significantly higher excretion of uC2C is associated with grade 2 cartilage lesion in knee joint. Highly significant correlation appears between increased uC2C outputs and decline in the clinical parameters of the lower limb.

Biography

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