Background: Diabetes mellitus and knee osteoarthritis (OA) were commonly coexisting, and metabolic syndrome (MetS) shared many pathways with knee OA. However, the effects of glucose homeostasis and MetS on knee cartilage in young adults were unknown.

Objectives: To describe the associations of glucose homeostasis measures and MetS measures with knee cartilage defects and cartilage volume in young adults.

Methods: Australian young adults from the Childhood Determinants of Adult Health Study were selected to undergo knee magnetic resonance imaging (MRI) scans during 2004-2006 (aged 26-36 years). Glucose, insulin, triglyceride and HDL cholesterol were measured using serum samples. Homeostatic model assessment 2-insulin resistance (HOMA2-IR), homeostatic model assessment 2-beta cell function (HOMA2-beta), HOMA2-IR, HOMA2-beta cell function (HOMA2-B), HOMA2-insulin sensitivity (HOMA-S) were calculated using HOMA2 calculator (version 2.2.3 available from http://www.dtu.ox.ac.uk/homa/calculator) according to fasting glucose and fasting insulin. MetS was defined when at least three of the following five components were present: high waist circumference (male >102 cm, female >88 cm), high fasting glucose (>5.6 mmol/L), high serum triglycerides (>1.7 mmol/L), low HDL-C (male <1.03 mmol/L, female <1.3 mmol/L), and high blood pressure (≥130/85 mmHg). Cartilage defects and cartilage volume were measured from MRI scans. Data were analysed using logistic binomial or linear regressions and were adjusted for age, gender, body mass index and physical activity.

Results: Among 328 participants (47.3% were females), 40 (12.7%) had hyperglycaemia and 21 (6.7%) had MetS. Glucose homeostasis measures (except fasting glucose) were associated with tibiofemoral cartilage defects (Fasting insulin: relative risk (RR) 1.05/mU/L, 95% confidence interval (CI) 1.01 to 1.08; HOMA2-IR: 1.44, 1.08 to 1.92; HOMA2-B: 2.59, 1.33 to 5.07; HOMA2-S: 0.36, 0.18 to 0.72), but not patellar cartilage defects. There were no associations between glucose homeostasis measures and knee cartilage volume. MetS measures were not associated with either cartilage defects or cartilage volume, except the associations between high waist circumference and tibiofemoral cartilage defects (RR 2.32, 95% CI 1.18 to 4.54) and between low HDL-C and tibiofemoral cartilage defects (RR 1.99, 95% CI 1.08 to 3.69).

Conclusion: Insulin resistance was associated with higher risk of tibiofemoral cartilage defects amongst young adults. MetS was not associated with either cartilage defects or cartilage volume. These suggest that glucose homeostasis, but not MetS, may play a role in cartilage damage in young adults and may lead to knee OA in later life.

Disclosure of Interests: None declared

MALIGNANCY RISK IN MALE PATIENTS WITH ANKYLOSING SPONDYLITIS

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Background: In recent studies, the association between autoimmune disease and malignancy has been reported. However in Ankylosing spondylitis (AS), a chronic inflammatory rheumatic disease with marked male predominance, the evidence of this relationship is scarce and inconsistent.

Objectives: To determine the overall cancer and site-specific cancer risk in male patients with AS.

Methods: Using the claims database of Health Insurance and Review Assessment (HIRA), male patients with AS without prior cancer history between 2012 and 2014 were enrolled (n=21,780). For the control group, male general population, stratified random samples of claims data were used (n=342,361). All individual was observed up to the development of any cancer, or end of the study period (December 31, 2015). Incidence rates (IR) of overall and site-specific cancer were presented as the number of events per 10,000 person-years. To make fairer comparison between AS patients and general population, we calculated age adjusted incidence rate by dividing cancer event of general population with corresponding age. The standardized incidence ratio (SIR) was used to represent the association between AS and cancer, accounting for person-years at risk.

Results: During 71,046 person-year, total 552 cases of cancer occurred in male AS group. Prostate cancer was the leading type of cancer in male AS patients (101 cases, IR 14.22, 95% CI 11.44-16.99). And it was followed by liver cancer (70 cases, IR 9.9, 95% CI 7.5-12.2), lung cancer (48 cases, IR 6.8, 95% CI 4.9-8.7), colorectal cancer (45 cases, IR 6.3, 95% CI 4.5-8.2) and stomach cancer (43 cases, IR 6.1, 95% CI 4.2-7.9). Compared to general population, the overall incidence of cancer was increased in male patients with AS (SIR 1.25, 95% CI 1.14-1.36).

Incidence rate was presented as the number of events per 10,000 person-year with 95% CI. AS, ankylosing spondylitis; IR: incidence ratio; SIR, standardized incidence ratio; CI, confidence interval

Conclusion: Male patients with AS have a increased overall cancer risk, especially in pancreas cancer and malignancy of male reproductive system.

REFERENCES:

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