previously associated with coronary artery disease,⁵ was genotyped by TaqMan probes. Results were adjusted by potential confounding factors (STATA® v.11.1). **Results:** Serum and mRNA levels of omentin were lower in axSpA compared to controls ($p < 0.001$). Low omentin serum levels were observed in obese patients, patients with inflammatory bowel disease (IBD) and in those with an atherogenic index indicative of dyslipidemia ($p = 0.002$, 0.006 and 0.004 , respectively). Interestingly, the C allele of rs12409609 (both when alleles and genotypes were assessed) was associated with low mRNA levels of omentin in axSpA ($p < 0.001$). No association was observed between omentin and markers of subclinical atherosclerosis at the DNA, mRNA and protein level.

Conclusion: style="font-family: 'Times New Roman','serif'; font-size: 10.0pt; margin: 0cm; margin-bottom: 8.0pt; line-height: 106%; margin-left: 0cm; margin-right: 0cm; margin-top: 0cm; mso-style-name: Normal_0; text-align: justify;" font-size="11.0" data-pos-index="15" class-name="Deleted">Omentin is linked to obesity and adverse lipid profiles in axSpA. Additionally, low serum levels of omentin are associated with the presence of IBD in axSpA. These data support a role of omentin as a CV risk biomarker in axSpA.

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OP0305

THE ALARMIN S100A9 HAMPERS OSTEOCLAST DIFFERENTIATION FROM CIRCULATING PRECURSORS BY REDUCING THE EXPRESSION OF RANK

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Background: High levels of the damage-associated molecular pattern (DAMP) S100A8/A9 are produced in the inflamed synovium during experimental and human rheumatoid arthritis (RA), which have been implicated in sterile inflammation-induced bone resorption. We and others have previously shown that stimulation of mature osteoclasts with S100A8/A9 increases their bone-resorptive capacity. In agreement, reduced bone destruction was observed after induction of experimental RA models in S100a9-/- mice. However, its effects on the differentiation of osteoclasts from their precursors remains elusive.

Objectives: Here, we investigated the effects of S100A9 on osteoclast differentiation from CD14⁺ circulating precursors.

Methods: CD14⁺ monocytes were isolated from buffy coats of healthy donors and differentiated towards osteoclasts with macrophage colony-stimulating factor (M-CSF) and receptor activator of nuclear factor kappa-B (RANK) ligand in the presence or absence of S100A9. Differentiation state of osteoclasts was determined by tartrate-resistant acid phosphatase (TRAP) staining and resorption

capacity was quantified using hydroxyapatite-like-coated plates. RNA expression was analyzed with RNA sequencing and qPCR. RANK expression was assessed using FACS. Underlying epigenetic programming was studied using chromatin immunoprecipitation. Secretion of pro-/anti-inflammatory mediators was analyzed with Luminex analysis.

Results: S100A9 stimulation during monocyte-to-osteoclast differentiation resulted in a strong decrease in the numbers of multinucleated osteoclasts, underlined by a decreased resorptive capacity. The thus differentiated cells showed a high production of pro-inflammatory factors, such as interleukin (IL)-1 β , IL-6, IL-8, and tumor necrosis factor- α (TNF α) after 16h of stimulation. In contrast, at day 4, the cells showed a decreased expression of the osteoclast-promoting factor TNF α . Interestingly, we showed that S100A9 stimulation only during the first 16h of culture was sufficient to reduce osteoclastogenesis. To determine the mechanism of how this short S100A9 stimulation might reduce the osteoclast differentiation, we determined the protein expression of RANK. We observed that within this 16h time frame, S100A9 inhibited the M-CSF-mediated induction of RANK, which we found to be associated with changes in various histone marks at the epigenetic level. This S100A9-induced reduction in RANK could be partially reversed by blocking TNF α using etanercept, but not by blocking interleukin-1 (IL-1) with the IL-1 receptor antagonist.

Conclusion: Whereas S100A8/A9 was previously shown to stimulate the resorptive capacity of mature osteoclasts, we here show that early S100A9 stimulation impedes monocyte-to-osteoclast differentiation via reduction of RANK expression that is partially TNF α -mediated. This suggests that the timing of exposure to S100A8/A9 is an important determinant for monocyte-to-osteoclast differentiation.

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Public health, health services research, and health economics

OP0306

GEOGRAPHICAL VARIATION IN PATIENT OUTCOMES OF PRIMARY KNEE REPLACEMENT ACROSS CLINICAL COMMISSIONING GROUPS: STUDY FROM "THE NATIONAL JOINT REGISTRY OF ENGLAND, WALES, NORTHERN IRELAND AND THE ISLE OF MAN"

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Background: In the UK, the Health and Social Care Act 2012, places duties on the NHS Commissioning Board and Clinical Commissioning Groups (CCG) to have regard to the need to reduce variations in access to, and outcomes from, health care services for patients¹. There are well known geographical variations in the uptake of common surgical procedures including knee replacement². Much less is known about variations in outcomes of surgery and factors that can explain why such variation exists.

Objectives: Our aim was to explore variation in patients' outcomes for primary total or unicompartmental knee replacement (TKR/UKR) surgery across CCGs, and to identify whether patient, surgical and hospital factors can explain why such variation exists.

Methods: We used the National Joint Registry, which incorporates data on knee replacement surgeries. Primary operations were linked with Hospital Episode Statistics data which contains records of all inpatient episodes undertaken in NHS hospitals, and Patient Reported Outcome Measures (PROMs). Primary TKR/UKR in people aged 18 years or over between 2014 and 2016 were identified. Multilevel regression models were generated for the following outcomes: length of stay (LOS), bed costs, change in Oxford knee score (OKS) 6-months after surgery, and complication by 6 months. Models included a wide range of patient, surgical