Introduction Serum amyloid A (SAA) is a sensitive inflammatory marker rapidly increased during the acute phase, followed by a steady decline to physiological levels during resolution. While resolution and SAA reduction have been documented, the exact mechanism remains elusive. Although antibodies against SAA (anti-SAA) have been previously identified in healthy blood donors (HBDs) in smaller, preliminary studies, their potential function is still unclear.1,2

Objectives To detect anti-SAA and anti-SAA1 in the sera of 300 HBDs using ELISA, characterise their subclasses and avidity. Additionally, we aimed to evaluate their presence in intravenous immunoglobulin (IVIG) and potential effects on released IL-6 from SAA-treated peripheral blood mononuclear cells (PBMCs).

Methods An in-house ELISA was adapted from Rosenau and Schur3 and developed4 for detection of anti-SAA and anti-SAA1. Both antibody fractions were isolated from IVIG using MicroLink Protein Coupling Kit (Thermo Scientific). PBMCs were purified from 5 HBDs by density gradient centrifugation and stimulated with SAA or SAA1 (1.5 µg/ml) in the presence/absence of anti-SAA and anti-SAA1 for 5 hours, 37°C. IL-6 concentration was measured in supernatants by ELISA (Invitrogen).

Results The median (IQR) absorbance in HBDs was 0.655 (0.262–1.293) for anti-SAA and 0.493 (0.284–0.713) for anti-SAA1. Both antibodies were found in the IgG subclass, with heterogeneous to high avidity and were detected also in IVIG. Stimulation of PBMCs with SAA significantly induced IL-6 release (mean ±SD) (385.9±184.4 pg/ml) with levels decreasing significantly upon addition of 4.5 (131.4±44.4 pg/ml) or 9.0 µg/ml (118.1±57.4 pg/ml) anti-SAA. A similar trend was also found for SAA1 and anti-SAA1.

Conclusions Anti-SAA could play a physiological role in down-regulating proinflammatory activity of SAA and could represent an attractive, novel therapeutic option for patients with chronic inflammatory diseases.

References

Acknowledgements The authors would like to acknowledge funding from the Slovenian Research Agency (ARRS) for the National Research Program P3-0314.

Disclosure of interest None declared.
IL-10 REGULATES SKIN THICKNESS AND SCALING IN IMIQUIMOD-INDUCED PSORIASIS-LIKE SKIN INFLAMMATION IN MICE

Introduction Psoriasis is an autoimmune skin disease affecting around 0.6% to 3% of the whole population with detrimental physical and societal impacts. Previously, we established a psoriasis-like skin inflammation model in mice using topical application of imiquimod (IMQ). This model successfully recapitulates all critical features of clinical psoriasis such as keratinocyte hyperproliferation, munoarachnoidals, and shares a similar infiltration profile of various immune cells. Previous data suggest up-regulation of IL-10, but its role in this psoriasis model is not clear.

Objectives To investigate the role of IL-10 in the IMQ-induced psoriasis-like skin inflammation.

Methods Psoriasis-like skin inflammation was induced by topical application of imiquimod (Alldara) for 5 or 10 days. Mice were injected intraperitoneally with anti-IL-10 or an isotype control antibody or subcutaneously with dexamethasone. Back skin of mice was scored for up to 10 days using a modified Psoriasis Area and Severity Index (PASI) score system adapted from clinical PASI score. Inflammation and skin thickness were scored histologically. Gene expression and immune cells in the skin were analysed using RT-PCR and flow cytometry, respectively.

Results At day 10, both skin thickness and scaling score were significantly higher after neutralising IL-10 compared to isotype control, or either group compared to dexamethasone-treated animals. At days 5 and 10, treatment confirmed that epidermal thickness was more prominent in anti-IL-10 treated mice compared to isotype control or dexamethasone-treated mice, with more profound differences at day 10.

Discussion The data strongly suggest that increased expression of activin A in the arthritic joint is most likely associated with enhanced osteoclast formation, promoting joint destruction in rheumatoid arthritis.

Disclosure of interest None declared.