Background: Biologic therapies have revolutionised therapy in inflammatory diseases such as psoriatic arthritis (PsA), driving major improvements in outcomes. Th17 cells appear to play a key role in the pathogenesis of PsA, and IL-17 can trigger the release of chemokine receptors such as CXCL8 and CCL2, leading to the further infiltration of other immune cells including neutrophils. Infiltrating activated neutrophils can themselves generate a range of chemokine receptors which may amplify and sustain the inflammatory response. Therapeutic targeting of IL-17 with biologics such as secukinumab offers great benefit in PsA by blocking this inflammatory cycle; however the interaction of this agent with neutrophils, key components of host defence as well as potential mediators of this disease, is not known.

Objectives: This study aimed to measure key aspects of neutrophil function to determine: a) changes in the functions of circulating neutrophils in PsA patients pre-therapy, compared to age- and sex-matched healthy controls and b) if these changes functioned in PsA patients 12-weeks post-secukinumab therapy.

Methods: Neutrophils were isolated from venous blood of 16 PsA patients and 10 healthy controls. Key neutrophil functions were measured at baseline and 12 weeks: reactive oxygen species (ROS) production, apoptosis (+/- TNF and GM-CSF), phagocytosis, receptor expression and chemotaxis. Changes in gene expression pre- and 12-weeks post-therapy (n=5 PsA) were measured using RNAseq.

Results: PsARC response was observed in 70.6% of participants on secukinumab therapy at 12 weeks. There were no significant differences in ROS production, phagocytosis or chemotaxis in PsA patients at baseline (compared to healthy controls) or during therapy. Chemotaxis towards IL-8 in PsA patients at baseline was decreased compared to that of healthy controls, but this difference did not reach statistical significance. Surface levels of activation markers CD11b/CD18 and CD63 were increased in PsA patients at 12-weeks compared to baseline, while surface levels of RANTES (CCL5) and GM-CSF were downregulated in matched controls. CD11b/CD18 and TWEAK (TNFSF12) and CCL2 during therapy, but upregulated expression of pathways involved in macrophage differentiation: phagocytosis or chemotaxis in PsA patients at baseline (compared to healthy controls) or during therapy. Chemotaxis towards IL-8 in PsA patients at baseline was decreased compared to that of healthy controls, but this difference did not reach statistical significance. Surface levels of activation markers CD11b/CD18 and CD63 were increased in PsA patients at 12-weeks compared to baseline, while surface levels of RANTES (CCL5) and GM-CSF were downregulated in matched controls.

Conclusion: Therapy with secukinumab in PsA did not significantly affect neutrophil host defence functions. The changes that were seen in circulating neutrophils indicate selective up- and down-regulation of functions that may reflect potential alterations in local or systemic cytokines, and/or an increase in the circulating pool of activated neutrophils that are no longer recruited into sites of inflammation because of the down-regulation of the local IL-17/CXCL8 signalling network.

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AB0117 HLA B27 SUBTYPES FREQUENCIES IN COLOMBIAN PATIENTS WITH SPONDYLOARTHRITIS AND HEALTHY SUBJECTS TYPED IN HIGH-RESOLUTION TECHNIQUE

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Background: HLA-B27 has been identified as a susceptibility and prognostic factor associated to axial spondyloarthritis. HLA-B27 allele has been described to be present in about 90% of patients with ankylosing spondylitis, and with a difference in clinical subtypes of SpA. In contrast, this allele has been observed to be present only in 7–8% in general population. A remarkable heterogeneity in HLA-B27 alleles has been reported. They have been determined at DNA sequence and some subtypes have been associated increasing the risk to develop the disease.

Objectives: To establish the frequencies of HLA-B27 subtypes in a group of Colombian patients with SpA and healthy population.

Methods: On total, 61 Blood samples from Colombian mestizo individuals with SpA according to ASAS classification-criteria were evaluated by Sequencing Technology: Illumina Sequencing/PacBio Sequencing with analysis of the second and third exon. Results reported with six digits (including null alleles). In total, 294 results of peripheral blood from healthy individuals without joint symptoms were typed. Frequencies were obtained for demographic and genetic variables. Ethnic Committee approval code 2018-020-2017-023

Results: The SpA group had a mean age of 45.88 ± 11.67, 62.3% of them were male, 6.6% reported current smoking and 37.7% reported smoking sometime in life. In total, 67.2% had inflammatory back pain, 14.8% had dactylitis, 63.9% enthesis and 57.4% arthritis. Thirty patients were HLA-B27 positive with a genotypic frequency of 50.8% and an allelic frequency of 24.6%. In this group of patients, the mean age was 45.88 ± 11.67, 66.6% were male, 33.3% of them were female, 66.6% of them were subtype B27:05:02:02 and 13.3% presented the B27:02:01. None of the SpA patients had both B27 alleles. On the other hand, the healthy individuals were men in 51.0% and the mean age was 37±15.4 years. Ten subjects were positive for the HLA-B27 allele with a genotypic frequency of 5.4% and an allelic frequency of 1.7%. In this group of individuals, 50.0% were male gender with a mean age of 38.4±17.9. No individuals were found to have the two alleles or homozygous for the B27 allele. In all of them the subtype B27:05:02:02 was observed in high-resolution sequencing.