(Tim-3) has been reported as an important regulatory molecule, expressed and regulated on different innate immune cells, plays a pivotal role in several autoimmune diseases. Recent study indicates that Tim3 is also expressed on neutrophils. However, the frequency and roles of Tim3-expressing neutrophils in AS was not clear.

**Objectives:** In this study, we investigated the expression of Tim3 on neutrophils in AS patients and analyzed the correlation between the level of Tim3-expressing neutrophils and the disease activity of AS.

**Methods:** AS Patients were recruited from Guangdong Second Provincial General Hospital (n=49). Age/sex-matched volunteers as Healthy controls (HC) (n=39). The medical history, clinical manifestations, physical examination, laboratory measurements were recorded. The expression of costimulatory molecules including programmed death 1 (PD-1), Tim-3 on neutrophils were determined by flow cytometry. The frequencies of Tim3-expressing neutrophils in AS patients were further analyzed for their correlation with markers of inflammation ESR and CRP, disease activity and severity of AS.

**Results:** The expression of Tim3 on neutrophils in patients with AS was increased compared to the HC (Figure 1A). The frequency of Tim3-expressing neutrophils in patients with AS showed a positive correlation with ESR, CRP and ASDAS-endorsed disease activity score (ASDAS) (Figure 1B). Moreover, the frequency of Tim3-expressing neutrophils in active patients (ASDAS≥1.3) was increased as compare with the inactive patients (ASDAS<1.3) (Figure 1C).

**Conclusion:** Increased Tim3 expression on neutrophils may be a novel indicator to assess disease activity and severity in AS, which may serves as a negative feedback mechanism preventing potential tissue damage caused by excessive inflammatory responses in AS patients.

**References:**

**Figure 1.** (A) The expression of Tim3 on neutrophils in AS and HC. (B) The correction between Tim3-expressing neutrophils and ESR, CRP, ASDAS. (C) The expression of Tim3 on neutrophils in active and inactive patients.

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more enthesitis and peripheral arthritis. Enthesitis is initiated during a mechano-sensation and the cultural difference including style of footwear could probably be one of the factors explaining our findings inflammatory back pain has been reported to be higher in Indians compared to Caucasians which could be due to life style.

The fact that ASDAS CRP behaves similarly in Indian patients across the two countries and is more when compared to Caucasians might point towards overall higher burden of disease in Indian population.

To our knowledge this is a first study comparing clinical manifestations of SpA between Indians and Caucasians.

References:

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Figure 1. Comparison of ΔBASFI between patients who achieved or not sustained ASDAS-CRP remission/LDA.
