## IL-17A/IL-17RA axis in the association of autoimmune diseases with cardiovascular complications

Patients with autoimmune diseases show a predisposition to cardiovascular diseases. This correlation is observed in those patients suffering from rheumatoid (RA)/psoriatic arthritis (PsA) and psoriasis (PS), chronic inflammatory pathologies of unknown aetiology associated with familiarity.

In comparison with the general population, RA and PsA (and in a less extent PS) patients possess significantly increased risk of cardiovascular events and mortality. Moreover, the prevalence of at least one cardiovascular event and coronary heart disease is significantly higher in RA/PsA patients compare to those with PS alone.

It has been suggested that the cardiovascular complication associated to autoimmune diseases it may depend on the presence of a mutual network in which systemic inflammation, coagulation and angiogenesis play closely related roles and there is growing interest in the study of cells and molecules that could confirm a link between these processes. In this context, one possible link may concern members of the interleukin-17 (IL-17) family.

Recent evidence, even form our research group, have demonstrated that IL-17A (the main cytokine of IL-17 family) is able to sustain inflammation and amplify murine and human platelet aggregation. Recent studies also demonstrate that IL-17A is a mediator of angiogenesis that stimulates vascular endothelial cell migration and modulates the production of a variety of pro-angiogenic factors.

On this basis, the main objective of this research project is to clarify the role of IL-17 family members in the association of RA, PsA and PS with platelet hyper-reactivity and peripheral biomarkers. This objective will be achieved by i) evaluating the relationship between circulating IL-17 levels (with particular attention paid to IL-17A, IL-17C and IL-17F, commonly increased in patients suffering from these pathologies) in preclinical model of RA, PsA and PS and the activation and regulation of their cardiovascular function; ii) demonstrating the modulation of IL-17A/IL-17RA axis on human (RA, PsA and PS) patients. This will allow us to work out which novel biologic has the best potential for new clinical investigation and application, focusing on the idea to link economic-Industrial development and environmental conservation.

## References

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