Immuno-Algeria: Drug hypersensitivity in TB/HIV endemic settings

IUIS-FAIS-SAI-AAA Immuno-Algeria course took place remotely between 11th May -12th June. The theme of the course was *"Challenge of Allergy in the Molecular Era"*. To ensure that all attendees had the immunological knowledge required for advanced content that was going to be discussed during the meeting, weekly immunology refresher lectures were provided during the month of May. This was followed by a 2 week long meeting focused on allergy content. Our final Immuno-Algeria highlight is a on a talk by Professor Jonny Peter (UCT, SA), who gave an excellent talk about drug hypersensitivity in TB/HIV endemic settings.

Prof. Peter began his talk with a basic overview of drug hypersensitivity and the immunological mechanisms associated with these conditions. Followed by an overview of the TB/HIV burden in SA and finally with inspiring and intriguing questions and gaps that we still need to address in the future.

It is important to note that the immunological mechanisms behind immune-mediated adverse drug reactions (IM-ADR) are still to be investigated. Although we know today that most of drug reactions are due to the pharmacological properties of the drug, an IM-ADR occurs in 20% of cases and should not be neglected. These reactions might be both antibody and/or T cell-mediated.

In Africa, the most common drug hypersensitivity reaction (DHR) inducing drugs are antii-microbial drugs prescribed in the context of TB (such as rifampicin or isoniazid)and HIV (anti-retroviral (ARV) drugs). Reactions can be very diverse and include different phenotypes with varying severity levels. It is of major importance to have tools that permit the prediction of a DHR before drug administration. Human leukocyte antigen (HLA) risk alleles have a very good negative predictive value for DHR, and thus may be used as a preventive measure. An example of which is HLA-B*57:01 genotyping in patients in order to prevent hypersensitivity towards abacavir (HIV ARV). Other interesting risk alleles are drug metabolism genes such as cytochromes or also t cell receptor encoding genes, specifically the genes encoding the hypervariable region CDR3 which is the most implicated in drug recognition.

Summary by Ikram Mezghiche

Recorded lectures are available at Immuno-Algeria Faculty Lecture Week 2