Endocrine Abstracts (2022) **81** EP784 | DOI: 10.1530/endoabs.81.EP784

A novel population of activated cytotoxic T cells infiltrate pituitary neuroendocrine tumour subytpes

Oriana Mazzitelli[1], Jean Paul Ebejer[2, 3], Nikolai Paul Pace[4], Mark Gruppetta[4, 5], Josanne Vassallo[4, 5] & David Saliba[1]

Non-functional pituitary adenomas (NFPA) are non-hormone secreting pituitary tumours while growth hormone-secreting pituitary adenomas (GHPA) are active pituitary tumours causing acromegaly. Since immunotherapy is becoming the preferred therapeutic strategy in cancers, understanding the diversity of immune cells infiltrating the tumour microenvironment is warranted. However, little is known about the immune landscape of pituitary tumours. We validated an acoustic-assisted hydrodynamic focusing cytometer based method (Attune, Thermofisher) to identify rare immune cell populations in NFPA (n=6) and GHPA (n=3) obtained from patients undergoing transphenoidal surgery. We unravelled key cellular populations of myeloid (macrophages and monocytes) and lymphocytic (CD4 and CD8 T cells) origin using a multi-colour panel of antibodies against cell surface (CD45, CD163, CD64, CD11b, CD3, CD56, CD19, CD4 and CD8) and intracellular (CD68, T-bet, GATA-3 and FOXP3) antigens and assessed the degree of T-cell activation using the CD44 marker. We also checked for the expression of immune checkpoint and exhaustion markers PD1 and TIM-3 respectively. In all samples, lymphocytic infiltrates were detected. In all except 1 NFPA and in all GHPA the CD8:CD4 ratio was greater than 1 ranging from 1.88 - 5.74 in NFPA and 1.35 - 5.21 in GHPA with no statistical difference between NFPA and GHPA. This method also revealed novel populations of activated, cytotoxic T cells in all pituitary adenomas

analysed. We are currently characterising the function of these cells in such tumours and how their presence correlates with the patients' clinical data and tumour characteristics.

Volume 81