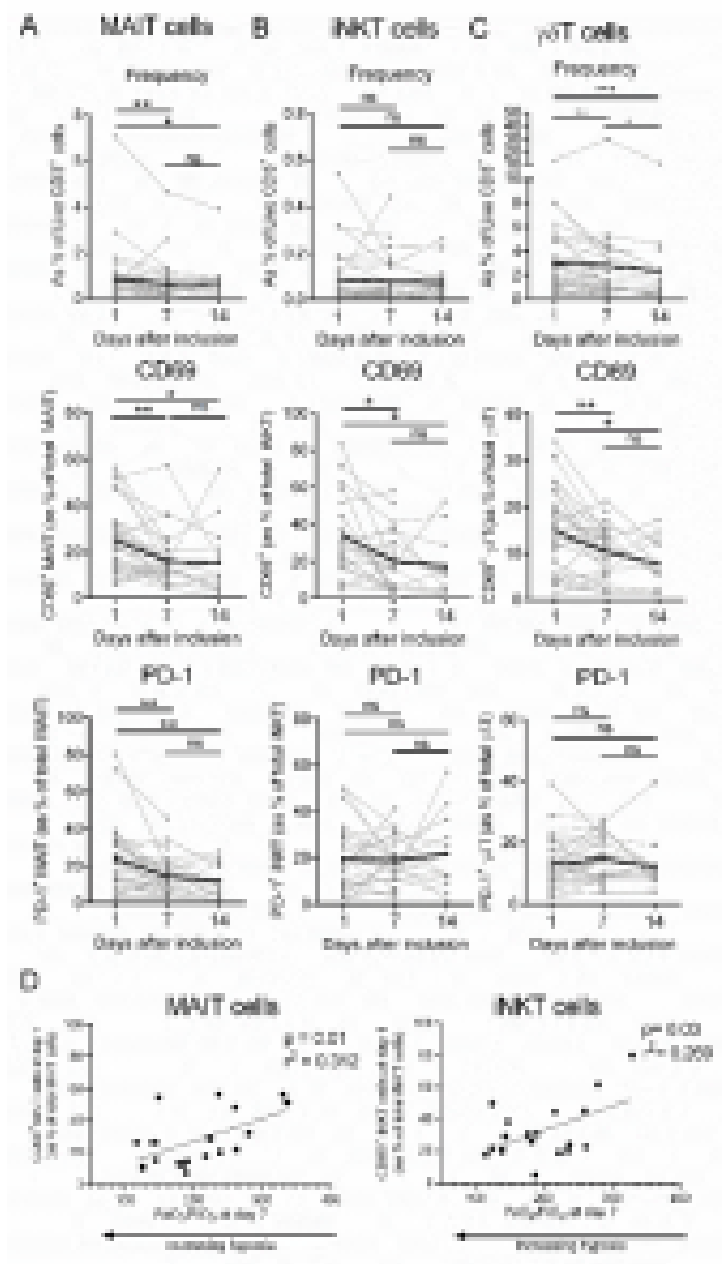
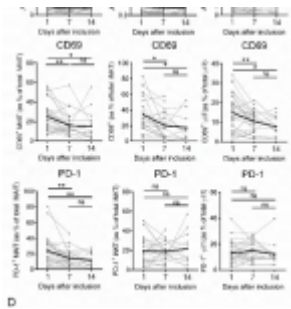


Innate T cells & severe COVID-19



Kinetic analysis of the frequency

and phenotype of innate T cells in severe Covid-19 patients. A-C, Flow cytometry analyses of relative proportion and CD69 and PD-1 expression on MAIT (A), $\gamma\delta$ T (B) and iNKT (C) cells in the blood of critically ill Covid-19 patients at days 1 (n = 30), 7 (n = 27) and 14 (n = 14). Kinetics plots showing mean value for each patient (each greyline corresponds to one patient). Median values for each parameters⁴³⁹ were plotted in black. D, Spearman's rank correlation of CD69 expression on blood iT cells and hypoxia levels in Covid-19 patients. ns, not significant; *, $p < 0.05$; **, $p < 0.01$; ***, $p < 0.001$.

COVID-19 and SARS-CoV-2 immunological research has predominantly focused on the role of innate cells such as macrophages, NK, neutrophils, and adaptive cellular and humoral immunity in pathogenesis. Recent Pre-print by Jouan and colleagues analysed the biology of innate T cells: mucosal associated invariant T (MAIT) cells, $\gamma\delta$ T and invariant natural killer (iNK) T cells in critically ill COVID-19 patients with varying co-morbidities (46.7% with Hypertension; 30% with Type 2 diabetes; 10% with cardiovascular disease).

Researchers observed that innate T cells from COVID-19 patients were highly pro-inflammatory characterised by high expression of IL-17 but not IFN- γ , compared to healthy controls. Interestingly, MAIT cells and iNKT cells from COVID-19 patients expressed high levels of both CD69 and PD-1, markers associated with activation and exhaustion, respectively. Based on this, and other evidence described in

the Pre-print author concluded that severe COVID-19 is associated with *“an altered innate T cell biology that may account for the dysregulated immune response observed in COVID-19-related acute respiratory distress syndrome.”*

Journal Article: Jouan et al. Pre-print. [Functional alteration of innate T cells in critically ill Covid-19 patients.](#) MedRxiv

Summary by Cheleka Mpande