

## Abstract for IADR Barcelona 2025

### Salivary lymphocyte phenotypes and cytokines in relation to SARS-CoV2 infection.

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#### Abstract

SARS-CoV2 gains access to the body across mucosal surfaces, largely those of the upper respiratory tract including the oral cavity. Innate immune factors at mucosae are likely to influence this process. In the UK, those of South Asian heritage (SA group) were significantly more affected by COVID than those of white British heritage (WB group). The aims of this study were to determine whether cellular and humoral innate immunity differed in the two populations. Levels of innate immune cytokines and of five major T lymphocyte phenotypes were assayed by ELISA/cytokine bead arrays and FACS respectively in stimulated whole mouth fluid (SWMF) and blood from over 194 subjects who had recovered from COVID or who remained infection free. Blood and SWMF were collected at the time of recruitment and sequentially up to 90 days later. Subjects of SA heritage had a significantly greater mean COVID severity score than those in the WB group. In general, CD4, Th1, and Th2 levels in blood were lower in SA than WB, while CD8 levels were higher. However, there were no significant differences in either group in the mean CD4, CD8 Th1 and Th2 lymphocyte levels in SWMF or blood in non-infected controls compared with those recovered from COVID. Mucosal cytokines showed a very different pattern in SWMF compared with blood. The SA group had lower mean levels than the WB group for CCL20, IL-1a in SWMF and for IL-8, MCP-1, IP-10 in blood. These results reveal differences between SA and WB groups in lymphocyte phenotype levels and in innate mucosal cytokine levels in both blood and saliva, that may influence susceptibility to mucosal SARS-CoV2 infections.

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#### Concise one sentence summary:

Mucosal innate immune factors may influence susceptibility to Sars-Cov2 infection and this study found that mean levels of salivary innate cytokines were significantly lower in those of South Asian heritage compared with those of white British heritage.