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Experimental Medicine Division

Finnish Society for Study of Infectious Diseases – report for 2022 research and travel grants

I wish to thank the Finnish Society for Study of Infectious Diseases for supporting my doctoral studies. Their support has allowed me to visit and work with Professor Peter Simmonds and Dr. Heli Harvala at University of Oxford, Nuffield department of Medicine, Peter Medawar Building for pathogen research. Together with my thesis supervisors Professor emeritus Klaus Hedman and Dr. Maria Perdomo, we have studied antibody response against SARS-CoV-2, the causative agent of COVID-19. More specially, neutralising antibodies and avidity (binding strength) of anti-SARS-CoV-2 antibodies and their relevance in convalescent plasma therapy of COVID-19 patients. This has resulted in a peer reviewed original publication, which will be a crucial part of my doctoral thesis and is further summarised below.

Nurmi V, Knight C, Estcourt L, Hepojoki J, Lamikanra AA, Tsang HP, Roberts D, Polack FP, Simmonds P, Hedman K, Alvarez-Paggi D and Harvala H. 2022. The relationship between SARS-CoV-2 neutralising antibody titres and avidity in plasma collected from convalescent non-vaccinated and vaccinated blood donors. *J Infect Dis*. Under Review.

Abstract: Convalescent plasma (CP) treatment of COVID-19 has shown significant therapeutic effect when administered early (e.g. Argentinian trial showing reduced hospitalisation) but has in general been ineffective (e.g. REMAP-CAP trial without improvement during hospitalisation). Since the trials differ in many aspects, reasons behind the different outcomes remain unknown. We investigated neutralising antibodies, anti-spike IgG and anti-spike IgG avidity of CP used in the REMAP-CAP and Argentinian trials and in vaccinees. We found no difference between the trial plasmas emphasising initial patient serostatus as treatment efficacy predictor. By contrast, vaccinee plasma showed significantly higher titres and avidity, being preferable for future CP-treatment.

Thanking you,



Date: 14<sup>th</sup> December 2022

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Visa Nurmi, MD

Nuffield Department of Medicine, Peter Medawar Building for Pathogen Research,

University of Oxford, Oxford, OX1 3SY, United Kingdom, and

Department of Virology, Faculty of Medicine, University of Helsinki, Helsinki, 00014, Finland

visa.nurmi@helsinki.fi