

## **SARS-COV-2 VACCINATION IN PEOPLE LIVING WITH HTLV: VACCINE HESITANCY AND ANTIBODY RESPONSE**

Rosadas C<sup>1</sup>, Cockbain B<sup>1</sup>, Haddow J<sup>2</sup>, Bradshaw D<sup>2</sup>, Perera P<sup>2</sup>, Adonis A<sup>2</sup>, Taylor GP<sup>1,2</sup>, Dhasmana D<sup>2</sup>.

<sup>1</sup> Department of Infectious Disease, Imperial College London, London, United Kingdom

<sup>2</sup> National Centre for Human Retrovirology, Imperial College Healthcare NHS Trust, London, United Kingdom

### **Background:**

SARS-CoV-2 vaccination is effective in the general population but vaccine hesitancy remains (5% in UK). Anecdotally this also occurs in people living with HTLV-1 (PLHTLV-1) in whom there are no vaccine response data. We evaluated the humoral response to SARS-CoV-2 vaccine in patients with HAM and asymptomatic infection (AC) and explored rates and reasons behind vaccine hesitancy.

### **Methods:**

Clinical records of PLHTLV in England (01/03/2021-20/02/2022) and participating in a Research Tissue Bank were reviewed. SARS-CoV-2 vaccine history, anti-Spike and anti-Nucleoprotein SARS-CoV-2 IgG (Abbott Architect) levels were acquired.

### **Results:**

105 PLHTLV-1 (77 AC, 28 HAM) were included. 19 (18.1%) refused vaccination (22.1% AC, 7.1% HAM) expressing concerns about safety, fertility and pregnancy, severe reactions and perceived low risk of infection. All 57 (age range:28-81years, 68% females) who were vaccinated and had antibody data available had anti-spike IgG following vaccination. Data are presented as median BAU/ml and (IQR). Four (7%) with anti-nucleoprotein antibodies were excluded from further analysis. Anti-spike IgG titre increased with doses received: one - 119(55-359); two -161(46-331); three - 2,528(217-3,599)). Following second dose, Pfizer-BioNTech elicited a greater antibody response than Oxford–AstraZeneca, reaching statistical significance: 269 (92-1,401), n=9 vs 94(29-297) n=25, p=0.06). Patients with HAM had lower antibody titres after second and third dose, compared to AC: AC, HAM: 1<sup>st</sup> dose:183(80-286) v 119(41-432) p=0.89; 2<sup>nd</sup>: 228(77-375) v 80 (14-106) p=0.0039; 3<sup>rd</sup>: 3,071(1,487-3,885) v 130(22-1,950) p=0.057. HAM patients on immunosuppressive therapy had lower, non-significant, anti-spike IgG: 83(35-121) v 133(15-956), p=0.7). Gender, age and HTLV-1 proviral load did not influence anti-Spike IgG antibody titres.

### **Conclusion:**

SARS-CoV-2 vaccine hesitancy is higher in PLHTLV in the UK than in general population (but is impacted by ethnicity) and needs to be addressed. All patients seroconverted following vaccination. Patients with HAM had lower levels of antibodies compared to AC. Long-term case-controls studies are needed.

### **Disclosure of Interest Statement:**

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