Systemic and mucosal adaptive immunity to SARS-CoV-2 during the Omicron wave in patients with chronic lymphocytic leukemia

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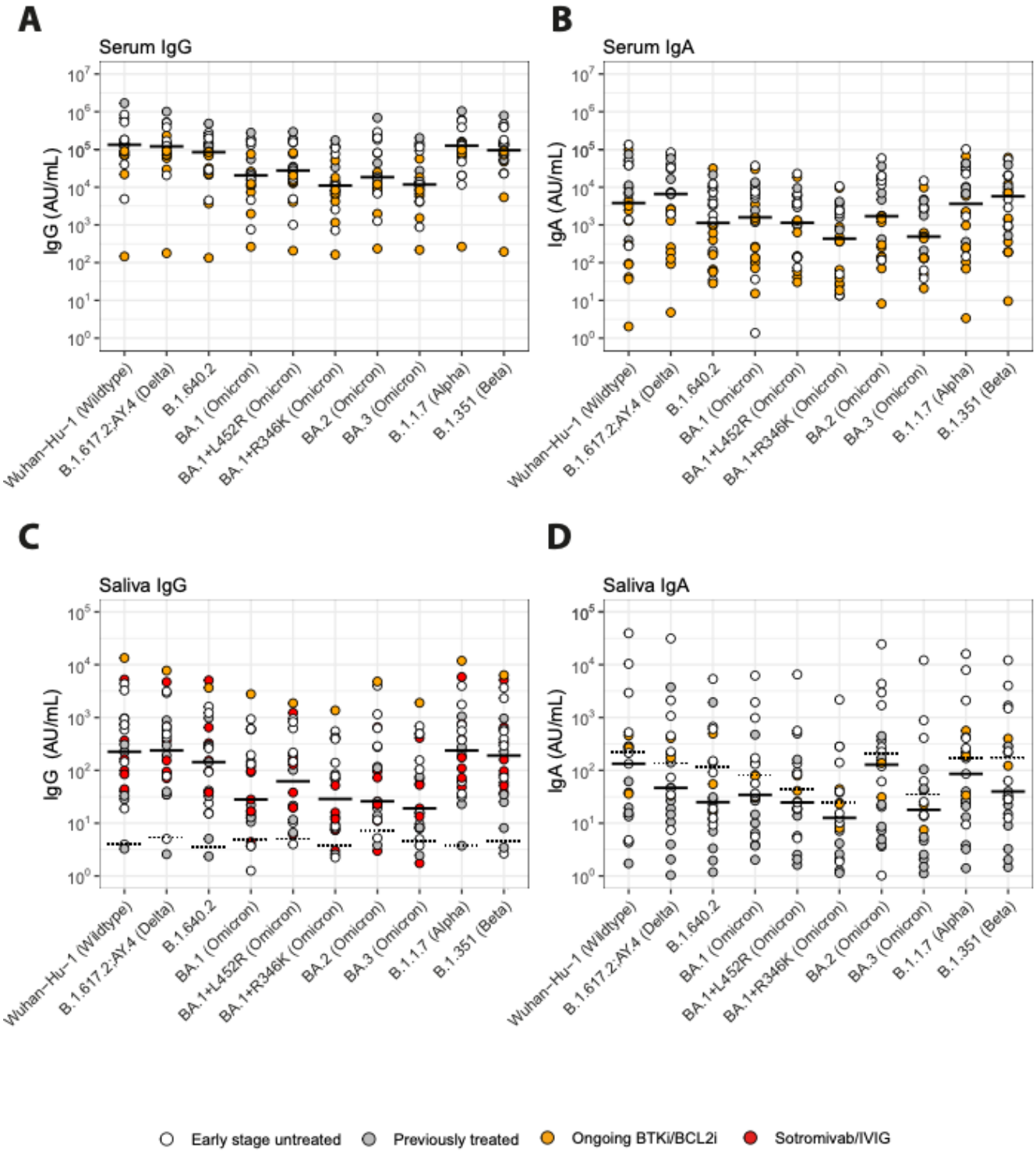
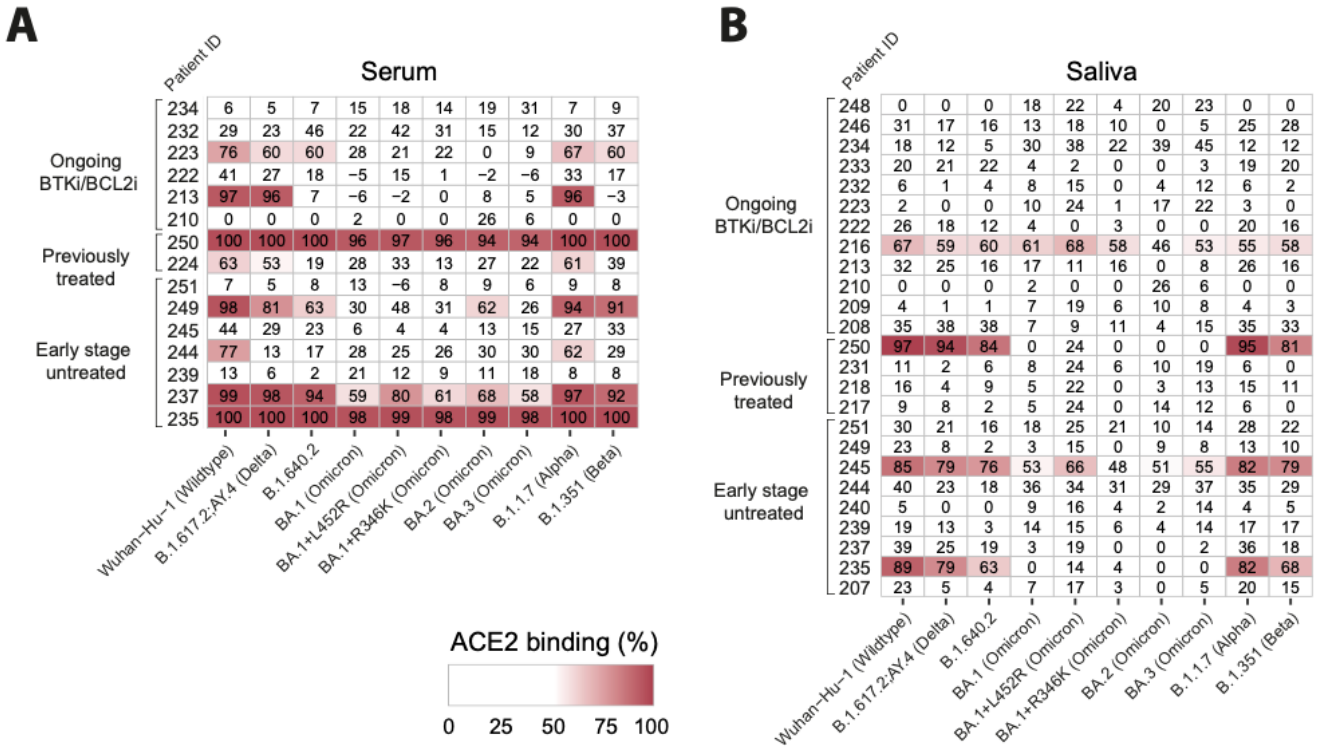
SUPPLEMENTAL FIGURES

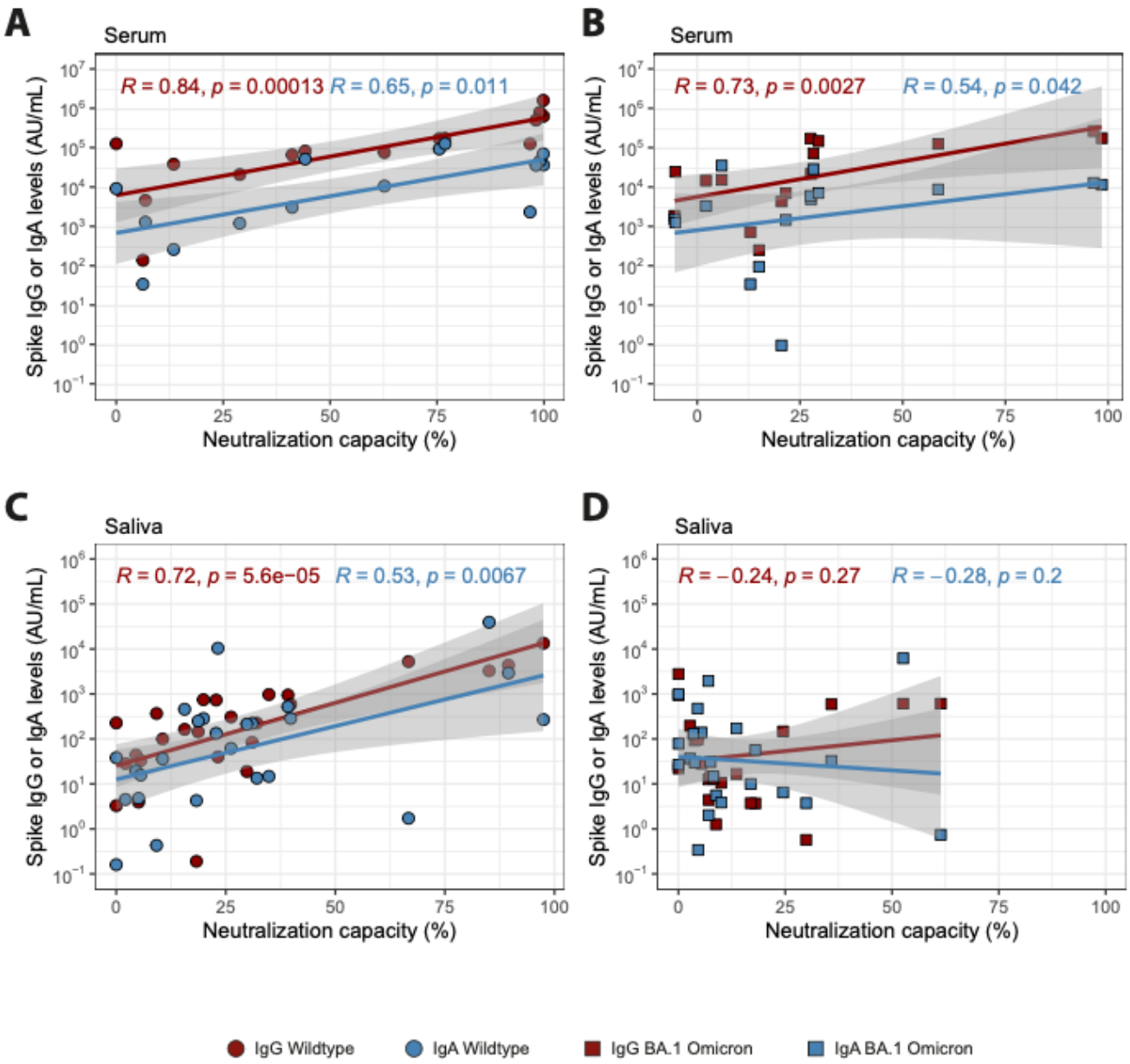


Supplementary figure S1. Serum and saliva levels of IgG and IgA reactive against 10 different SARS-CoV-2 variants after clinical recovery from Omicron infection. Serum IgG (A) and IgA (B) and saliva IgG (C) and IgA (D) levels for all CLL subgroups. Patients

who had received sotrovimab or IVIG were not included in the serum IgG analyses, but were included in the saliva IgG analyses, and are highlighted (red) in the panel. Median levels are indicated with solid lines. Cut-off levels (dotted lines) for positive responses in saliva against Spike protein were defined as the mean plus 6x standard deviation of the intensity signals of 27 negative control saliva samples (pre-pandemic and seronegative saliva from 2020), and were as follows: anti-wild-type IgA: 226.7 AU/ml; anti-Delta IgA: 137.0 AU/ml; anti-B.1.640.2 IgA: 119.0 AU/ml; anti-Omicron BA.1 IgA: 81.8 AU/ml; anti-Omicron BA.1+L452R IgA: 43.7 AU/ml; anti-Omicron BA.1+R346K IgA: 24.8 AU/ml; anti-Omicron BA.2 IgA: 203.2 AU/ml; anti-Omicron BA.3 IgA: 35.4 AU/ml; anti-Alpha IgA: 168.6 AU/ml; anti-Beta IgA: 175.5 AU/ml; anti-wild-type IgG: 4.01 AU/ml; anti-Delta IgG: 5.41 AU/ml; anti- B.1.640.2 IgG: 3.51 AU/ml; anti-Omicron BA.1 IgG: 4.98 AU/ml; anti-Omicron BA.1+L452R IgG: 5.02 AU/ml; anti-Omicron BA.1+R346K IgG: 3.72 AU/ml; anti-Omicron BA.2 IgG: 7.33 AU/ml; anti-Omicron BA.3 IgG: 4.66 AU/ml; anti-Alpha IgG: 3.77 AU/ml; anti-Beta IgG: 4.49 AU/ml.



Supplementary figure S2. Heat map of Spike neutralization capacity of serum and saliva after clinical recovery from Omicron infection. Numbers signify percent blocking of Spike-ACE2 binding by serum (A) and saliva (B) from individual patients. Samples blocking at least 50% of Spike proteins are colored. Serum samples from patients who had received IVIG or sotrovimab were not included in the analysis.



Supplementary figure S3. Correlation between Ab levels and neutralization capacity in serum and saliva samples after clinical recovery from Omicron infection. Specific IgG and IgA levels against wild-type Spike in serum (A) and saliva (C) and against Omicron BA.1 in serum (B) and saliva (D) were correlated with the sample's ability to block ACE2 binding (% neutralization capacity). There was a strong correlation between serum IgG and IgA levels and the corresponding neutralization capacity of the wild-type virus variant (r=0.84, p<0.0001 and r=0.65, p=0.011). The same correlations in serum for Omicron BA.1 Spike variant were strong (r=0.73, p=0.0027 and moderate r=0.54, p=0.042). Saliva IgG and IgA anti-wild-type Spike levels correlated with neutralization capacity (r=0.72, p<0.0001 and r=0.53, p=0.0067), but this was not the case for Omicron BA.1 anti-Spike (r=-0.27, p=0.20 and r=-0.28, p=0.17).

Serum samples from patients who had received sotrovimab or IVIG were not included in the analysis. Statistics was assessed with Spearman's rank correlation (R).