**Supplementary Methods**

IBD treatment groups were defined as patient on stable doses of maintenance therapy in the following groups. The non-systemic immunosuppressive group: on mesalamine monotherapy or no therapy for IBD, or on vedolizumab monotherapy. Vedolizumab was considered in this group since previous studies have shown that it does not appear to impact vaccine response (1, 2). The immunosuppressed group consisted on being one of the following groups: thiopurine therapy group: on azathioprine at least 2 mg/kg or 6MP 1 mg/kg; anti-TNF therapy group: on maintenance therapy infliximab (at least every 8 weeks), golimumab (at least monthly), adalimumab (at least every 2 weeks), or certolizumab (at least monthly); anti-TNF combination therapy group: on anti-TNF therapy as described above along with either 15 mg of methotrexate or azathioprine at least 1 mg/kg or 6MP 0.5mg/kg; ustekinumab therapy group: on either ustekinumab monotherapy or combination therapy with methotrexate or azathioprine; tofacitinib therapy group: on tofacitinib at least 5mg PO BID and ; corticosteroid therapy group: on any one of the systemic immunosuppressive groups and any dose of corticosteroids.

LabCorp’s Cov2Quant IgG assay uses electrochemiluminescence immunoassay technology for the quantitative measurement of IgG antibodies to SARS-CoV-2. This assay was used to measure anti-receptor binding domain IgG antibodies (the target of COVID-19 vaccines) and Roche anti nucleocapsid (indicative of a prior infection) antibodies in all patients with IBD and HC. Internal validation within LabCorp indicated an assay sensitivity of 99% (95% CI, 97–100). Strong correlations between levels of RBD-binding antibodies and SARS-COV-2 neutralizing antibodies in patient sera have been shown in prior studies.

Sample size calculation and data analyses for our primary objective comparing antibody comparisons between patients with IBD and healthy controls, we prospectively calculated our sample sized based on antibody concentrations from a phase 1 clinical trial.(3) We used a 2:1 allocation with sample sizes of 120 and 60 participants in each group yield 80% power to detect a statistically significant difference of in sample means between patient with IBD (60% of GMT from Phase 1 trial GMT 190; SD 250) and healthy controls (estimated GMT from Phase 1 trial GMT 317; SD 250).

Antibody concentrations between groups were compared using Mann-Whitney U tests for independent samples and Kruskal-Wallis test with Bonferroni correction. Seroprotection and seroconversion rates between groups were compared using Chi-square or Fisher’s Exact tests.

**References:**

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3. Anderson EJ, Rouphael NG, Widge AT, et al. Safety and Immunogenicity of SARS-CoV-2 mRNA-1273 Vaccine in Older Adults. New England Journal of Medicine 2020;383:2427-2438.