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Abstract Discussion Forum **(0)**

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LOW BMI IS AN INDEPENDENT DETERMINANT OF VACCINE NON-RESPONSE IN PATIENTS WITH INFLAMMATORY BOWEL DISEASE IN INDIA: ANALYSIS OF SEROLOGICAL RESPONSES TO SARS-COV-2 VACCINATION

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Track: Inflammatory Bowel Diseases

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Background: Studies of patients with inflammatory bowel diseases (IBD) from Western countries have demonstrated that serological responses to mRNA and vector-based vaccines are differentially impacted by IBD therapies. Little is known regarding antibody responses in patients with IBD residing in low- and middle-income countries. In this study, we investigate the factors which may influence the inhibitory and total antibody responses to SARS-CoV-2 in two centers in Northern India.

Methods: We studied 180 IBD patients in Chandigarh and New Delhi, India, who received two doses of a COVID-19 vaccine. Patients received the Oxford-AstraZeneca-equivalent Covishield (n=149) or inactivated virus vaccine Covaxin (n=31) between January 2021 and December 2022. We measured anti-S and anti-N antibody levels and performed inhibition assays to measure the inhibition of ACE2 on SARS-CoV-2 binding against alpha, delta, and omicron variants after first and second vaccine doses. Univariate and multivariate analyses were performed to identify determinants of vaccine response.

Results: On univariate analysis, IBD patients taking steroids (p= 0.019), immunomodulators (p= 0.047), or infliximab (p= 0.0057) had lower responses after dose 2 for any vaccine compared to those not on these medications or receiving 5-ASAs.

Multivariate analysis including gender, IBD type, smoking status, comorbidities, IBD medications, and a history of COVID-19 diagnosis as covariates revealed low BMI (dose 1: OR: 1.12 [CI: 0.084, 0.136]; dose 2: 1.11 [0.076, 0.128]), infliximab (dose 1: 1.67 [-.92, 1.94]), and current steroid use (dose 1: 1.50 [-1.384, 2.195]; dose 2: 0.200 [-3.76 0.54]) as independent determinants of lower seroprevalence levels after receiving a dose of Covishield or Covaxin.

Low BMI was associated with reduced rates of seroconversion on univariate analysis. For every fall in BMI by 1, the average ACOV2S V2 anti-Spike level was reduced by 8.2 (Figure 1). Of vaccinated IBD patients with a BMI greater than or equal to 25, 97% (28/29) reached the maximum anti-Spike value after their second dose of a COVID-19 vaccine.

Conclusions: Immunosuppressive drug therapy and reduced BMI emerge as determinants of a lower seroconversion rate in IBD patients in India. The association with low BMI represents a unique finding compared with studies in the West. These data are useful for future pandemic vaccine considerations in patients with IBD.

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