

with their doctor and/or receiving information on the adverse effects of the vaccine. Previous to the additional dose, COVID-19 vaccination was present in 94.4% of patients (n=254) (complete regimen using Pfizer 63%, Astra-Zeneca 15.4%, Moderna 12.2% and Janssen in 9.4% of patients, respectively). 42.7% of patients personally requested the appointment for initial dose of vaccination and 59.1% contacted the IBD Unit to discuss the decision to be vaccinated. Adverse effects occurred in 53.9% of the cases after the standard vaccination regimen, mainly pain in the arm (40%). Up to 94.1% of the patients agreed for an additional dose and 57.2% had already received the additional dose at the time of the assessment.

Conclusion: IBD patients on biological agents and at high-risk for COVID-19 accept the vaccine as well as an additional dose if recommended. Physicians in charge of IBD units should provide information and confidence in the use of the vaccine in these IBD patients. Remains to be studied the impact of the additional dose of vaccine in these patients.

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Attitudes and predictors of COVID-19 vaccine uptake in patients with Inflammatory Bowel Disease

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Background: Vaccination has proven to be an effective public health measure to combat the SARS-CoV-2 pandemic. However, vaccine "hesitancy" has limited uptake in some populations. We surveyed individuals with IBD to explore factors associated with vaccine uptake, concerns, and which sources of information were considered trustworthy surrounding vaccination.

Methods: Patients with IBD were recruited from a specialist IBD clinic at a tertiary hospital in Australia, and through a national IBD patient

society (Crohn's & Colitis Australia). Patients were invited to complete an anonymous survey between 31 October – 17 November 2021. Logistic regression was used to identify variables associated with vaccine uptake. Data was analysed using SPSS (Chicago, IL).

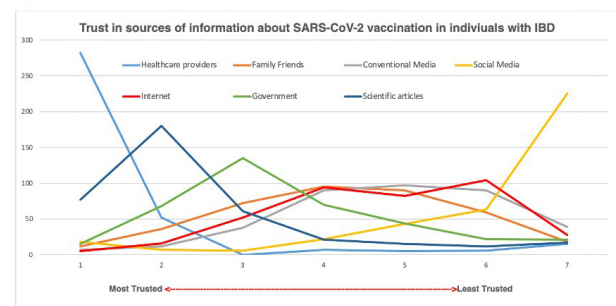
Results: There were a total of 441 respondents. Demographic and IBD characteristics are presented in Table 1. Most respondents 411 (93.2%) had received at least 1 dose of COVID-19 vaccination. Among 30 (6.8%) respondents who had not been vaccinated, concern about experiencing an IBD flare with vaccination and vaccine safety were most commonly identified. Of those who had not yet been vaccinated, the possibility of getting vaccinated in the future was likely in 3 (10.7%), unlikely in 12 (42.8%), whilst 13 (45.4%) were unsure about future vaccination. Multivariate analysis [Table 2] demonstrated past influenza vaccination (OR 3.28, 95% CI 1.34–8.9, $p = 0.009$) and self-perceived risk of being more unwell with COVID-19 infection due to IBD was positively associated with COVID-19 vaccine uptake (OR 5.25, 95% CI 1.96–14.04, $p < 0.001$). Most agreed that that vaccination in general was safe 306 (90.1%). The perceived risk of COVID-19 vaccination causing an IBD flare, and concern that vaccination is unsafe in pregnancy were both negatively associated with vaccine uptake (OR 0.28, 95% CI 0.10–0.77, $p = 0.01$ and OR 0.22, 95% CI 0.08–0.65, $p = 0.006$) respectively. Trust in healthcare workers was high with 282 (73.7%) responders ranking them the most trusted source to obtain information surrounding vaccination [Figure 1]. Social media was ranked the least trusted source of information by 225 (58.6%).

Table 2: Factors affecting COVID-19 vaccination uptake

Factor	Univariate OR (95% confidence interval)	Multivariate aOR (95% confidence interval)
Male sex	0.71 (0.30-1.65) $P=0.62$	0.55 (0.20-1.42), $p = 0.21$
University or vocational degree	2.76 (1.29 – 5.91), $p = 0.009$ *	2.03 (0.77-5.29), $p = 0.14$
Crohn's disease	1.24 (0.54-2.84), $p = 0.60$	
Influenza vaccination in past 12 months	2.12 (2.12-10.15) $P < 0.001$ *	3.28 (1.34-8.9), $p = 0.009$ *
Completion of childhood immunisation	2.09 (0.45-9.67), $p = 0.34$	
Confidence in safety of vaccines in general	6.87 (2.90-16.26), $p < 0.001$	2.16 (0.73 – 6.37), $p = 0.162$
Self-perceived risk of being more unwell with COVID-19 infection due to IBD	5.47 (2.47-12.12) $p < 0.001$	5.25 (1.96-14.04), $p < 0.001$ *
Self-perceived risk of vaccines causing IBD flare	0.25 (0.11-0.53), $p < 0.001$	0.28 (0.10-0.77), $p = 0.01$ *
Concern that IBD medications will reduce vaccine efficacy	1.63 (0.75-3.55), $p = 0.21$	
Concern that vaccination will reduce fertility	0.34 (0.10-1.08), $p = 0.06$	
Concern that vaccines are not safe in pregnancy	0.08(0.03-0.19), $p < 0.001$	0.22 (0.08-0.65), $p = 0.006$ *

* denotes significance $p < 0.05$

Graph 1: Trust in sources of information about vaccination in IBD



Conclusion: Past influenza vaccination and self-perceived risk of being more unwell with COVID-19 due to IBD, were positive predictors of COVID-19 vaccine uptake in IBD patients. Concerns about an IBD flare with vaccination is a unique consideration in those vaccine hesitant and is a negative predictor of vaccine uptake. Among those not yet vaccinated, 45% were uncertain about future vaccination. Given healthcare providers were ranked the most trusted source surrounding this domain, this survey highlights the key role they have in exploring vaccination concerns and misconceptions in IBD patients

Table 1: Characteristics of responders

Survey Items	No. (percentage)
1. IBD diagnosis	
Crohn's disease	262 (59.4%)
Ulcerative colitis	161 (36.5%)
Indeterminate colitis	18(4.1%)
2. Age group	
16-30	90 (20.4%)
31-59	291 (66.0%)
60+	59 (13.4%)
3. Gender	
Male	98 (22.2%)
Female	337 (76.4%)
4. Location of IBD care	
Public hospital	192 (43.5%)
Private gastroenterologist	225 (51.2%)
General Practitioner	23 (5.2%)
5. Highest level of education	
High school	102(23.1%)
TAFE	91 (20.6%)
University	248 (56.2%)
6. Employment status	
Student	27 (6.1%)
Employed	313 (71.0%)
Unemployed	99 (22.4%)
7. Current IBD Medications	
Mesalazine or sulfasalazine	178 (40.1%)
Methotrexate	34 (7.7%)
Azathioprine or mercaptopurine	161 (36.5%)
Anti-TNF	159 (36.1%)
Ustekinumab	34 (7.8%)
Vedolizumab	54 (12.2%)
Tofacitinib	3 (0.7%)
Prednisone or oral budesonide	41 (12.3%)
8. Vaccine obtained	
Pfizer BNT162b2	273 (61.9%)
Astra Zeneca ChAdOx1 nCoV-1	133 (30.2%)
Moderna mRNA-1273	5 (1.1%)
9. Factors contributing to vaccine hesitancy amongst those not yet vaccinated	
Unable to schedule vaccine appointment	1(4%)
Concern about safety of vaccine	19 (57%)
Concern about IBD flaring with vaccination	20 (71%)
Waiting for advice from doctors	4 (14%)
Concern about how quickly vaccines were developed	17 (57%)
Do not believe in efficacy of vaccination	6 (38%)