



# Immune Checkpoint Inhibitors for Colorectal Cancer in Patients with Inflammatory Bowel Disease

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## Introduction

- Immune checkpoint inhibitors (ICIs) have revolutionized the management of many types of malignancies, including microsatellite instability high (MSI-H) colorectal cancers (CRC), but pose a unique challenge to patients with underlying inflammatory disorders such as inflammatory bowel disease (IBD).
- The safety and efficacy of ICI therapy for CRC in patients with underlying IBD has not been described.

## Methods

- We queried the electronic health database for patients with IBD and CRC who were treated with ICI at Memorial Sloan Kettering Cancer Center in New York City.
- We collected demographic data, IBD and cancer history, and outcomes of both IBD and CRC after treatment with ICIs.

## Results

- Four patients with underlying IBD were treated with ICIs for MSI-H colorectal cancer (Table 1). All patients had long-standing IBD for greater than 20 years.
- Two of the patients were diagnosed with concomitant Lynch syndrome at the time of MSI-H cancer diagnosis. No patients were on active IBD therapies at the time of ICI initiation.
- All four patients were treated with anti-PD-1 therapy (Pembrolizumab) for stage 3 (n=2) or stage 4 (n=2) CRC.

Patient	Age at ICI	Sex	IBD Type	IBD duration (years)	Prior IBD Meds	Lynch Syndrome	Cancer stage	ICI type	Doses of ICI	ICI toxicity (CTCAE v5.0)	Rx for IBD Flare	Best Overall Cancer Response to ICI	Surgery for CRC
1.	51	M	CD	38	SSZ, CS, IFX	No	IV	PD-1	33	Enterocolitis (Grade 3)	CS, ADA, UST	PR	Subtotal Colectomy (pre-ICI)
2.	50	M	CD	23	6-MP	No	IV	PD-1	10	Acute Kidney Injury (Grade 4)	N/A	PR	Total Proctocolectomy with End Ileostomy (pre-ICI)
3.	35	M	UC	22	5-ASA	Yes	III	PD-1	33	Colitis (Grade 2)	5-ASA	CR	None
4.	34	F	UC	22	5-ASA, CS, AZA	Yes	III	PD-1	4	Colitis (Grade 3)	5-ASA	PR	Total Proctocolectomy with End Ileostomy (post-ICI)

ADA: Adalimumab, AZA: Azathioprine; CD: Crohn's disease, CR: complete response, CS: corticosteroids, CRC: colorectal cancer, CTCAE: Common Terminology Criteria for Adverse Events, IBD: inflammatory bowel disease, ICI: immune checkpoint inhibitor, IFX: infliximab, PD-1: Programmed Death 1, PR: partial response, SSZ: sulfasalazine, UC: ulcerative colitis, UST: Ustekinumab, 5-ASA: 5-aminosalicylate, 6-MP: 6-Mercaptopurine

## Results Cont.

- All four patients had robust cancer responses to ICI, three with partial responses and one with a complete response over a median follow-up time of 34 months.
- One patient with locally advanced rectal cancer had a complete response and has avoided the need for surgical resection and permanent stoma.
- Three patients had a flare of IBD while on ICI requiring initiation of 5-ASA (n=2) or immunosuppressive therapy (n=1). One patient required hospitalization for IBD flare.
- ICI therapy was held due to IBD flare for two patients who had already achieved significant response to ICI with stable disease.

## Conclusions

- In this small series of patients with IBD and MSI-H colorectal cancer, treatment with ICIs was effective at achieving cancer response in all patients.**
- IBD flares were common but manageable with standard medical therapy.**
- Larger studies are needed to explore the safety and efficacy of ICIs for CRC in patients with IBD.**

## References

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