



# Benefit of Initiating Biologic Therapy for Crohn's Disease within 2 Years of Diagnosis



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## Background

- Crohn's Disease (CD) is a disease of chronic inflammation that results in accumulation of bowel damage leading to complications such as strictures, fistulas, abscesses, disability, and death.
- More recent evidence and clinical practice guidelines suggest that biologic therapy is a preferred initial therapy in treating moderate to severe CD.<sup>1</sup>
- Emerging data suggests a 'therapeutic window' where early control of inflammation would prevent long term complications.<sup>2-3</sup>
- However, this has primarily been determined via post-hoc analysis of other trials and has not yet been proven in a real-world population.<sup>4-5</sup>

## Hypothesis

- We hypothesize that patients with CD initiated on biologic therapy within 2 years of diagnosis will achieve clinical remission, resulting in fewer CD-related complications than those who initiated biologic therapy later.

## Methods

- Retrospective cohort study of CD patients treated within the Military Health System to assess the relationship of timing of initiation of biologic therapy and progression to a CD-related complication.
- Data was collected from the military's universal electronic health record from January 1, 2013 to December 30, 2020.
- Clinical course was determined using clinical, biochemical, radiologic, and endoscopic/histologic findings.
- Complications assessed included CD-related emergency room (ER) visits, steroid use, hospitalizations, and surgeries.

## Results

- 343 patients with CD were identified.
  - 184 started on biologic therapy within 2 years of diagnosis.
  - 159 started on biologic therapy 2 or more years after diagnosis.
- Patients started on early biologic therapy were statistically younger and less likely to have been prescribed thiopurines prior to biologic therapy, but otherwise similar in BMI, sex, and race (Table 1).
- Patients started on biologic therapy within 2 years of diagnosis had significantly fewer CD-related complications (Figure 1).
- Early biologic therapy resulted in statistically significant reductions in number of ER visits, hospitalizations, surgeries, and steroid prescriptions (Table 2)

Figure 1: Progression-free patients post-biologic initiation.

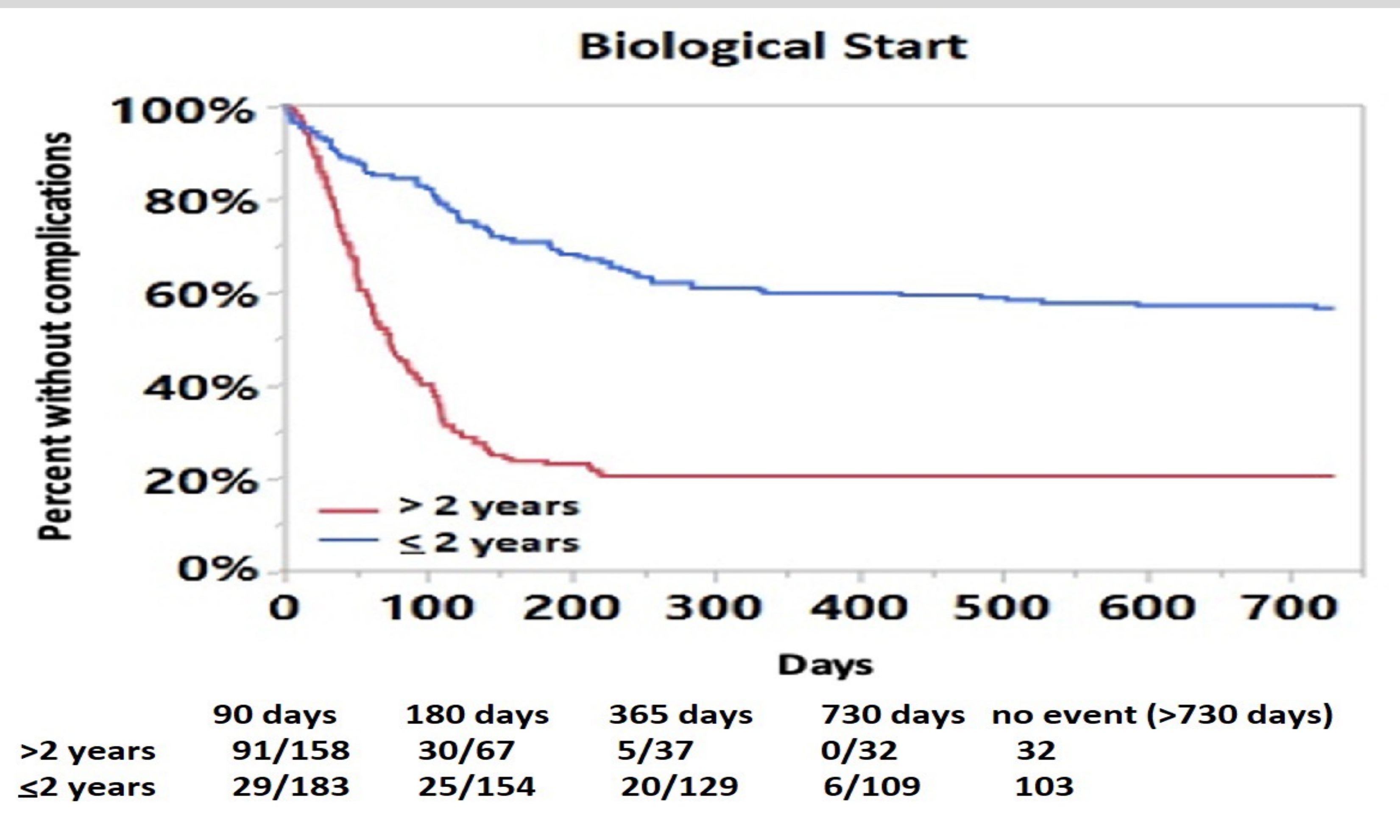


Table 1: Demographic data

Demographic Data	<2 years	>2 years	P-value
Male	57 (31%)	64 (40%)	0.073
Race: White	43 (23%)	29 (18%)	0.302
Black	91 (49%)	83 (53%)	
Asian/Pacific Island	41 (22%)	43 (27%)	
Native American	10 (5%)	4 (3%)	
Age of diagnosis	26.7 ± 10.3	32.9 ± 13.5	<0.001
BMI	26.7 ± 5.0	27.2 ± 5.5	0.433
Thiopurine use	51 (32%)	107 (57%)	<0.001

Table 2: Number of events

Events compared	<2 years	>2 years	NNT	P-value
Number of patients	184	158		
ER visits	59 (32.1%)	101 (63.9%)	3.1	<0.001
Hospitalizations	62 (33.7%)	103 (65.2%)	3.2	<0.001
Surgery	55 (29.9%)	90 (57.0%)	3.7	<0.001
Steroid prescriptions	16 (8.7%)	22 (13.9%)	19.2	<0.001

## Discussion

- Earlier initiation of biologics (within 2 years of diagnosis) results in a lower probability of CD-related complications, including emergency room visits, steroid use, hospitalizations, and surgeries.
- Number needed to treat (NNT) to prevent 1 CD-related complication is ~2.5.

Initiation of biologic therapy within 2 years of diagnosis of Crohn's Disease is associated with an absolute risk reduction of complications of approximately 40%

## Disclaimer

The views expressed herein are those of the authors and do not reflect the official policy or position of Brooke Army Medical Center, the U.S. Army Medical Department, the U.S. Army Office of the Surgeon General, the Department of the Army, the Department of the Air Force, and the Department of Defense or the U.S. Government.

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