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BACKGROUND

- The IBD population is aging: In 2010, 1/5 of IBD population were ≥65, today, almost 1/3 are ≥65^{1,2}
- Higher rates of anti-TNF antibodies have been found in older adults with IBD >60 years compared to those ≤60 years (OR: 2.9, 95%CI 1.09-9.12, p = 0.045)³
- **Aim:** Assess 1) if older adults had higher rates of anti-TNF antibodies (ATI), 2) whether dose of infliximab prescribed differed by age

METHODS

Database: large commercial laboratory database (Prometheus Laboratories, San Diego, CA) including data on therapeutic drug monitoring of infliximab (IFX) using anti-TNF antibody levels (ATI)

Data: extracted IFX dosing as well as ATI for all individuals who were tested with this drug assay from 2015-2021

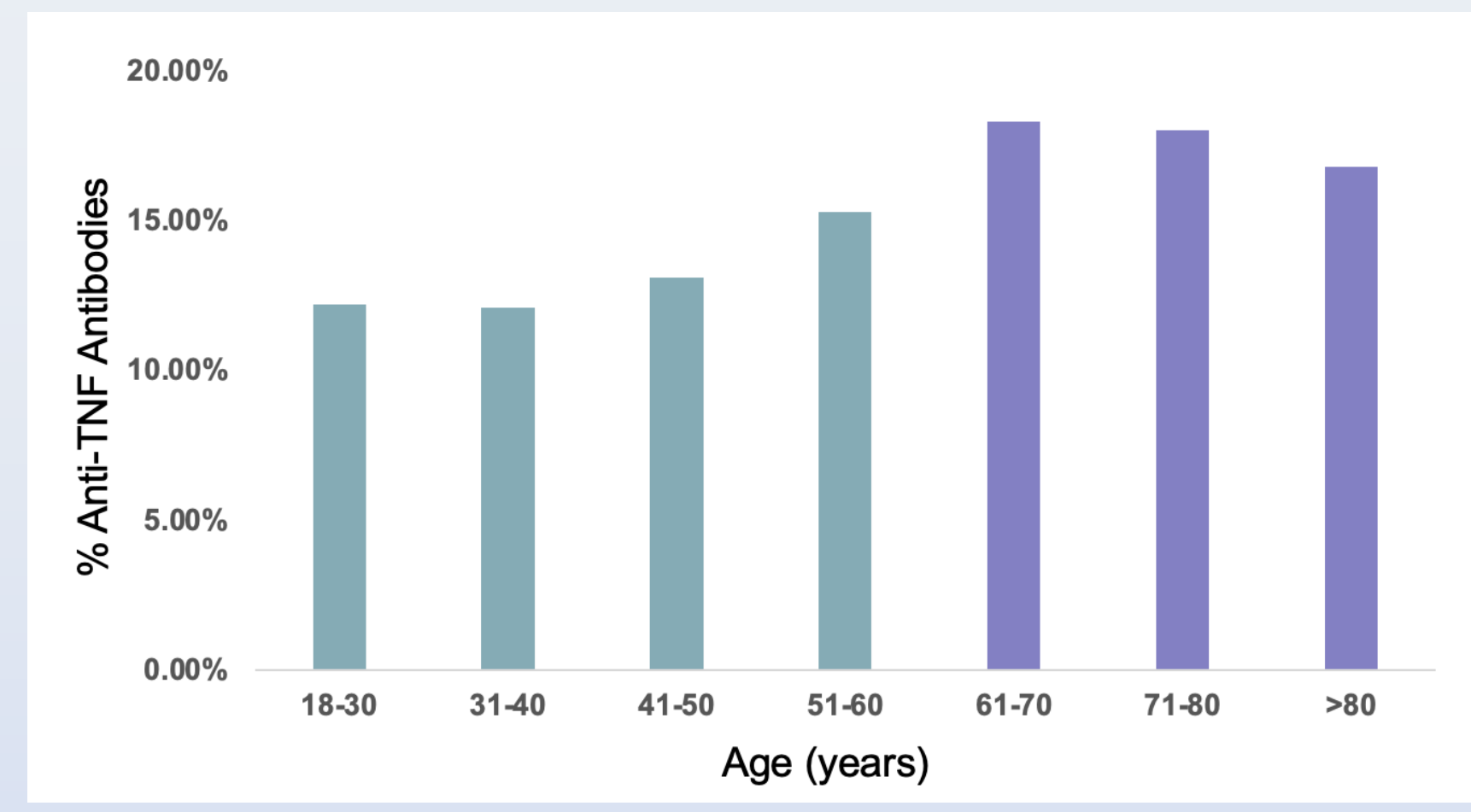
Primary Outcome: presence of ATI (titer >3.1 U/mL)

Patient Cohort: ICD-9 and ICD-10 codes for ulcerative colitis (UC) and Crohn's disease (CD) on infliximab

Multivariable Analysis: logistic regression to assess impact of IFX dose, age (<60 years-old v. ≥60 years-old), and IBD subtype on the development of ATI

RESULTS

Figure 1: Percentage of Sample with Anti-TNF Antibodies, Stratified by Age in Decades



Total Numbers

- 22,197 unique specimens, with 3,028 (13.6%) having ATI
- 14,971 patients with CD, and 6,050 patients with UC

ATI by Age (Figure 1)

- When stratified by age, individuals ≥60 years-old developed ATI 18.1% (473/2,612) of the time as compared to 15.0% (2,555/17,030) for individuals <60 years of age (p<0.01)

ATI by IFX Dose

- When IFX dose <10mg q8 weeks, older adults (≥60y) were more likely to develop ATI as compared to younger adults (22.8% vs. 16.2%, respectively, p<0.01)
- When IFX dose ≥10mg/kg q8 weeks, age ≥ 60 years-old was no longer significantly associated with ATI (9.9% if <60 years-old vs. 10.6% if ≥60 years-old) on univariable analysis

Age and IFX Dose

- Older adults less likely to receive IFX doses ≥10mg/kg q8 weeks (38.4% in older adults vs. 49.7% in younger adults; p<0.01)

Table 1. Multivariable analysis of factors associated with development of Anti-TNF antibodies

	Odds Ratio [95% CI]
Age	
≥60 years	1.35 [1.20 – 1.51]
Infliximab dose	
≥10mg/kg q8 weeks	0.53 [0.49 – 0.57]
IBD Subtype	
Ulcerative Colitis	1.44 [1.33 – 1.57]

Factors independently associated with development of ATI on multivariable analysis:

- Age ≥60y
- IFX dose ≥ 10mg/kg q8 weeks
- UC as compared to CD

CONCLUSIONS

- Older adults were more likely to received lower doses of IFX as compared to younger adults.
- Older adults with IBD develop ATI more frequently than younger adults when adjusting for IFX dose and IBD subtype, despite the idea of immunosenescence
- When IFX dose was ≥10mg/kg q8 weeks, age was no longer associated with ATI
- Disease characteristics should drive need for higher doses of IFX, as opposed to age alone.

REFERENCES

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