## Safety and Efficacy of Vedolizumab in Elderly Patients With Inflammatory Bowel Disease: A Systematic Review and Meta-Analysis Dushyant Singh Dahiya<sup>1</sup>, Saurabh Chandan<sup>2</sup>, Jay Bapaye<sup>3</sup>, Babu P. Mohan<sup>4</sup>, Lena L.Kassab<sup>5</sup>, Ojasvini C. Chandan<sup>6</sup>, Parambir S. Dulai<sup>7</sup> & Gursimran S. Kochhar<sup>8</sup>

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### INTRODUCTION

Global incidence and prevalence of inflammatory bowel disease (IBD) continues to rise, especially for individuals  $\geq$ 60 years of age. There remains paucity of data on the use of biologics like Vedolizumab in elderly patients, as they are underrepresented in clinical trials. We performed a systematic review and meta-analysis to provide real-world data on the clinical efficacy and safety of Vedolizumab in the elderly population.

#### METHODS

A systematic search of several databases including Ovid EBM reviews, Ovid Embase, Ovid Medline, Scopus, and Web of Science was performed through May 2022 to identify studies which assessed the safety and efficacy of Vedolizumab therapy in the elderly population. Pooled proportion and risk ratios (RR) were calculated using the random-effects model. Heterogeneity was assessed using Cochran Q statistical test and I<sup>2</sup> statistics.

#### **RESULTS (DEMOGRAPHICS)**

- Total 11 studies with 3,546 IBD patients were included • in our final analysis (1,314 elderly and 2,232 young).
- Mean age at initiation of vedolizumab therapy was 63.6– 72.2 years for the elderly cohort.

#### CONTACT

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- 3. Rochester General Hospital, Rochester, NY
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# Vedolizumab is equally safe and efficacious in inducing clinical and endoscopic remission in elderly patients compared to young IBD patients.

#### Figure 1a

Elderly		Young			Ris
Events	Total	Events	Total	Weight	IV, Rar
3	34	117	1400	26.1%	1.0
17	144	3	140	23.9%	5.51
1	24	10	96	13.0%	0.4
15	198	26	396	37.0%	1.1
	400		2032	100.0%	1.4
36		156			
0.42; Cł	$ni^2 = 7.$	09, df =	3 (P =	0.07); l <sup>2</sup> :	= 58%
241.4 (P. 1997) - 1997			8483740. 8		
	Events 3 17 1 15 36 0.42; C	Events Total   3 34   17 144   1 24   15 198   400   36   • 0.42; Chi <sup>2</sup> = 7.	EventsTotalEvents33411717144317144312410151982640036156	EventsTotalEventsTotal334117140017144314012410961519826396400203236156 $: 0.42; Chi^2 = 7.09, df = 3 (P = 3)$	EventsTotalEventsTotalWeight334117140026.1%17144314023.9%124109613.0%151982639637.0%4002032100.0%36156 $\cdot$ $\cdot$ $\cdot$ 0.42; $Chi^2 = 7.09$ , $df = 3$ (P = 0.07); $l^2$ $\cdot$

Events Total

103

74 ----

469

11 108

#### Figure 1b

#### Study

#### Adar 2019 Pabla 2021 Yajnik 2017 Ibraheim 2020

Common effect model Random effects model

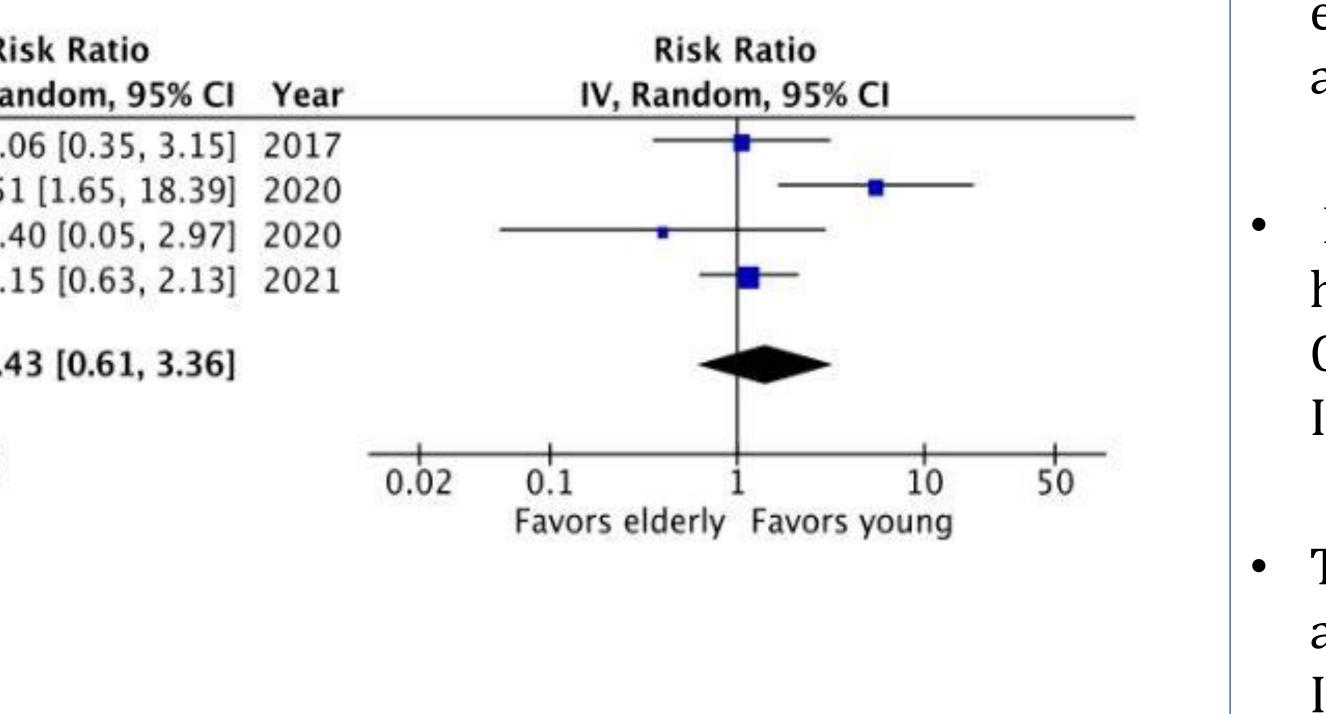
Heterogeneity:  $I^2 = 76\%$ ,  $\tau^2 = 1.0421$ , p < 0.01

0.15 Serious Infections

5. Mayo Clinic, Rochester, MN 6. University of Nebraska Medical Center, Omaha, NE

> • Pooled rate of endoscopic, clinical, and steroid-free remission for elderly IBD patients was 32.69% (95% CI: 27.71-38.09; I<sup>2</sup> 93%), 37.95% (95% CI: 33.08-43.06; I<sup>2</sup> 13%) and 38.7% (95% CI: 31.63-46.43; I<sup>2</sup> 57%), respectively.

Although elderly patients had lower rates of steroid-free remission, we did not find a statistically significant difference in rates of clinical or endoscopic remission when compared to younger patients.



Proportion 95%-CI

0.0388 [0.0107; 0.0965] 0.1019 [0.0520; 0.1749] 0.0054 [0.0001; 0.0299] 0.0135 [0.0003; 0.0730] 0.0362 [0.0226; 0.0575] 0.0259 [0.0078; 0.0829]

Vedolizumab is equally efficacious in inducing clinical and endoscopic remission in elderly and young patients without differences in the overall rates of infections.

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#### **RESULTS (REMISSION)**

#### **RESULTS (SAFETY)**

• The pooled rate of overall and serious infections in the elderly cohort was 8.6% (95% CI: 6.83-10.8; I<sup>2</sup> 23%) and 3.6% (95% CI: 2.26-5.75; I<sup>2</sup> 76%), respectively.

Pooled rate of IBD-related surgery and IBD-related hospitalizations in the elderly cohort was 8.64% (95%) CI: 6.97-10.65; I<sup>2</sup> 78%) and 10.54% (95% CI: 8.37-13.2;  $I^2 0\%$ ), respectively.

• There was no statistical difference in overall infections and IBD-related surgeries between elderly and young IBD patients, RR 1.43 (95% CI: 0.61-3.36; I<sup>2</sup> 58%), p=0.4 and RR 1.20 (95% CI: 0.79-1.84; I<sup>2</sup> 16%), p=0.4, respectively.

#### CONCLUSION