Supplementary Table 1. Crohn’s disease-specific medication utilization at the time of enrollment into the TARGET-IBD cohort, a comparison across age categories

|  | **Age at Enrollment** | | | |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **IBD Treatments at Enrollment** | **18-29 (N=442)** | **30-49 (N=744)** | **50-65 (N=426)** | **> 65 (N=220)** | **P-Value (18-29 vs. >65)** | **P-Value (30-49 vs. >65)** | **P-Value (50-65 vs. >65)** |
|  | **n (%)** | **n (%)** | **n (%)** | **n (%)** |  |  |  |
| Aminosalicylate Monotherapy | 28 (6.3) | 59 (7.9) | 48 (11.3) | 43 (19.5) | <.0001 | <.0001 | 0.0042 |
| Thiopurine Monotherapy | 24 (5.4) | 45 (6.0) | 23 (5.4) | 16 (7.3) | 0.3489 | 0.5125 | 0.3437 |
| Methotrexate Monotherapy | 2 (0.5) | 14 (1.9) | 4 (0.9) | 2 (0.9) | 0.4755 | 0.3214 | 0.9701 |
| Anti-TNF Monotherapy | 169 (38.2) | 209 (28.1) | 91 (21.4) | 30 (13.6) | <.0001 | <.0001 | 0.0172 |
| Anti-Integrin Monotherapy | 18 (4.1) | 45 (6.0) | 27 (6.3) | 16 (7.3) | 0.0791 | 0.5125 | 0.6518 |
| Anti-IL-12/23 Monotherapy | 36 (8.1) | 65 (8.7) | 39 (9.2) | 11 (5.0) | 0.1381 | 0.0709 | 0.0613 |
| JAK Inhibitor Monotherapy | 1 (0.2) | 2 (0.3) | 1 (0.2) | 1 (0.5) | 0.6144 | 0.6641 | 0.6339 |
| Anti-TNF + Thiopurine | 33 (7.5) | 69 (9.3) | 28 (6.6) | 11 (5.0) | 0.2305 | 0.0436 | 0.4268 |
| Anti-TNF + Methotrexate | 18 (4.1) | 40 (5.4) | 19 (4.5) | 9 (4.1) | 0.9910 | 0.4460 | 0.8273 |
| Anti-Integrin + Thiopurine | 8 (1.8) | 10 (1.3) | 7 (1.6) | 5 (2.3) | 0.6863 | 0.3285 | 0.5747 |
| Anti-Integrin + Methotrexate | 5 (1.1) | 8 (1.1) | 2 (0.5) | 6 (2.7) | 0.1305 | 0.0721 | 0.0140 |
| Anti-IL-12/23 + Thiopurine | 12 (2.7) | 18 (2.4) | 6 (1.4) | 0 (0.0) | 0.0137 | 0.0199 | 0.0772 |
| Anti-IL-12/23 + Methotrexate | 13 (2.9) | 15 (2.0) | 13 (3.1) | 2 (0.9) | 0.0982 | 0.2733 | 0.0869 |
| Biologic + Aminosalicylate | 30 (6.8) | 53 (7.1) | 37 (8.7) | 12 (5.5) | 0.5079 | 0.3860 | 0.1419 |
| Thiopurine/Methotrexate + Aminosalicylate | 11 (2.5) | 29 (3.9) | 29 (6.8) | 10 (4.5) | 0.1552 | 0.6686 | 0.2530 |

Anti-interleukin 12/23 (Anti-IL 12/23); Anti-tumor necrosis factor alpha (anti-TNF)

Supplementary Table 2. Ulcerative colitis-specific medication utilization at the time of enrollment into the TARGET-IBD cohort, a comparison across age categories

|  | **Age at Enrollment** | | | |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| **IBD Treatments at Enrollment** | **18-29 (N=207)** | **30-49 (N=442)** | **50-65 (N=298)** | **> 65 (N=201)** | **P-Value (18-29 vs. >65)** | **P-Value (30-49 vs. >65)** | **P-Value (50-65 vs. >65)** |
|  | **n (%)** | **n (%)** | **n (%)** | **n (%)** |  |  |  |
| Aminosalicylate Monotherapy | 61 (29.5) | 189 (42.8) | 114 (38.3) | 101 (50.2) | <.0001 | 0.0771 | 0.0080 |
| Thiopurine Monotherapy | 4 (1.9) | 12 (2.7) | 11 (3.7) | 10 (5.0) | 0.0918 | 0.1442 | 0.4840 |
| Methotrexate Monotherapy | 1 (0.5) | 0 (0.0) | 1 (0.3) | 1 (0.5) | 0.9834 | 0.1381 | 0.7791 |
| Anti-TNF Monotherapy | 35 (16.9) | 46 (10.4) | 22 (7.4) | 12 (6.0) | 0.0005 | 0.0689 | 0.5395 |
| Anti-Integrin Monotherapy | 13 (6.3) | 21 (4.8) | 14 (4.7) | 8 (4.0) | 0.2937 | 0.6626 | 0.7019 |
| JAK Inhibitor Monotherapy | 2 (1.0) | 5 (1.1) | 0 (0.0) | 2 (1.0) | 0.9764 | 0.8775 | 0.0848 |
| Anti-TNF + Thiopurine | 13 (6.3) | 37 (8.4) | 26 (8.7) | 8 (4.0) | 0.2937 | 0.0432 | 0.0393 |
| Anti-TNF + Methotrexate | 7 (3.4) | 5 (1.1) | 8 (2.7) | 2 (1.0) | 0.1012 | 0.8775 | 0.1870 |
| Anti-Integrin + Thiopurine | 9 (4.3) | 12 (2.7) | 6 (2.0) | 1 (0.5) | 0.0120 | 0.0642 | 0.1583 |
| Anti-Integrin + Methotrexate | 3 (1.4) | 2 (0.5) | 1 (0.3) | 1 (0.5) | 0.3299 | 0.9381 | 0.7791 |
| Biologic + Aminosalicylate | 49 (23.7) | 89 (20.1) | 65 (21.8) | 27 (13.4) | 0.0080 | 0.0406 | 0.0180 |
| Thiopurine/Methotrexate + Aminosalicylate | 26 (12.6) | 56 (12.7) | 38 (12.8) | 22 (10.9) | 0.6131 | 0.5350 | 0.5433 |

Anti-interleukin 12/23 (Anti-IL 12/23); Anti-tumor necrosis factor alpha (anti-TNF)

| Supplementary Table 3. Evaluation of aminosalicylate use at the time of enrollment into the TARGET-IBD cohort, a comparison across age categories | | | | | | | | | |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Age at Enrollment** | | | |  |  |  |  |
| **IBD Treatments at Enrollment** | **18-29 (N=649)** | **30-49 (N=1186)** | **50-65 (N=724)** | **> 65 (N=421)** | **P-Value (overall)** | **P-Value (18-29 vs. >65)** | **P-Value (30-49 vs. >65)** | **P-Value (50-65 vs. >65)** |
| Sulfasalazine Monotherapy, n (%) | 4 (0.6%) | 17 (1.4%) | 15 (2.1%) | 25 (5.9%) | <.0001 | <.0001 | <.0001 | 0.0006 |
| Other Aminosalicylate Monotherapy, n (%) | 88 (13.6%) | 239 (20.2%) | 153 (21.1%) | 124 (29.5%) | <.0001 | <.0001 | <.0001 | 0.0015 |
| Note: P-values are from general association tests for difference in drug class usage by age group. | | | | | | | | | |
| Note: Monotherapy is defined as use of only one of the following drug classes: aminosalicylate, thiopurine, methotrexate, calcineurin inhibitor, anti-TNF, anti-integrin, anti-IL-12/23, or JAK inhibitor. | | | | | | | | | |
| Note: Other aminosalicylates include mesalazine, balsalazide, and olsalazine. Sulfasalazine monotherapy and other aminosalicylate monotherapy are not mutually exclusive. | | | | | | | | | |

Supplementary Table 4: Multivariable analysis evaluating odds of sulfasalazine monotherapy use among patients with Crohn’s disease and ulcerative colitis in the TARGET-IBD cohort

|  |  |
| --- | --- |
|  | Crohn’s Disease and Ulcerative Colitis  Adjusted OR (95% CI) |
| Age  18-29  30-49  50-65  >65 | 0.16 (0.06 – 0.49)  0.31 (0.16 – 0.62)  0.42 (0.21 – 0.82)  Reference |
| Academic Site of Care | 0.23 (0.12 – 0.44) |
| Female Sex | 0.59 (0.34 – 1.01) |
| Race  White  Non-White | 1.40 (0.50 – 3.95)  Reference |

All variables included in multivariable analysis are depicted above.

Supplementary Table 5: Multivariable analysis evaluating odds of non-sulfasalazine aminosalicylate monotherapy use among patients with Crohn’s disease and ulcerative colitis in the TARGET-IBD cohort

|  |  |
| --- | --- |
|  | Crohn’s Disease and Ulcerative Colitis  Adjusted OR (95% CI) |
| Age  18-29  30-49  50-65  >65 | 0.45 (0.32 – 0.62)  0.69 (0.53 – 0.90)  0.67 (0.50 – 0.89)  Reference |
| Academic Site of Care | 0.54 (0.45 – 0.65) |
| Female Sex | 0.91 (0.75 – 1.09) |
| Race  White  Non-White | 0.90 (0.68 – 1.20)  Reference |

All variables included in multivariable analysis are depicted above.

Supplementary Table 6. Multivariable analysis evaluating odds of combination therapy with an anti-tumor necrosis factor alpha use among patients with Crohn’s disease and ulcerative colitis in the TARGET-IBD cohort

|  |  |  |
| --- | --- | --- |
|  | Crohn’s Disease  Adjusted OR (95% CI) | Ulcerative Colitis  Adjusted OR (95% CI) |
| Age  18-29  30-49  50-65  >65 | 1.30 (0.74 – 2.28)  1.67 (0.99 – 2.81)  1.22 (0.69 – 2.15)  Reference | 1.58 (0.70 – 3.55)  1.70 (0.82 – 3.50)  2.21 (1.06 – 4.60)  Reference |
| Academic Site of Care | 1.06 (0.78 – 1.43) | 1.74 (1.13 – 2.67) |
| Female Sex | 1.22 (0.92 – 1.62) | 1.14 (0.76 – 1.73) |
| Race  White  Non-White | 0.69 (0.47 – 1.03)  Reference | 1.08 (0.57 – 2.04)  Reference |

All variables included in multivariable analysis are depicted above.

Odds Ratio (OR)

Supplementary Table 7. Patient-reported disease activity according to age and drug class, among UC and CD patients

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  |  | Ulcerative Colitis | | Crohn’s Disease | |
| Age | | 18-65 | >65 | 18-65 | >65 |
| Biologic drug | |  |  |  |  |
|  | Well-controlled | 76 | 10 | 130 | 13 |
|  | Not well-controlled | 112 | 8 | 310 | 19 |
|  | *p-value* | 0.21 | | 0.19 | |
| non-Biologic drug | |  |  |  |  |
|  | Well-controlled | 72 | 25 | 65 | 14 |
|  | Not well-controlled | 117 | 26 | 125 | 24 |
|  | *p-value* | 0.16 | | 0.76 | |
| *\*MH test for heterogeneity*  Note: Calculate the p-value separately by drug class and disease (4 p-values) | | | | | |

Well-controlled: MIBDI = “Rarely active” disease or “I was well in the past 6 months”

Not well-controlled: MIBDI = “Constantly”, “Often”, “Sometimes”, or “Occasionally” active disease