**SUPPLEMENTARY MATERIAL**

**Supplementary Table S1: Reasons for GLM treatment discontinuation during the 52-week observation period**

Safety analysis set

|  |  |  |  |
| --- | --- | --- | --- |
| **Reasons for treatment discontinuation, n (%)** | **Overall** **(n=391)** | **Biologic naïve****(n=168)** | **Biologic experienced****(n=223)** |
| Discontinued patients | 183 (46.8) | 79 (47.0) | 104 (46.6) |
|  Lack of efficacy | 117 (29.9) | 49 (29.2) | 68 (30.5) |
|  AE | 28 (7.2) | 14 (8.3) | 14 (6.3) |
|  Transfer hospital | 22 (5.6) | 9 (5.4) | 13 (5.8) |
|  Patient request | 10 (2.6) | 4 (2.4) | 6 (2.7) |
|  Not visit | 3 (0.8) | 1 (0.6) | 2 (0.9) |
|  Other | 3 (0.8) | 2 (1.2) | 1 (0.4) |

GLM, golimumab; AE, adverse event.

**Supplementary Table S2: Proportion of patients who continued GLM treatment during the 52-week observation period**

Efficacy analysis set

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Patients, n (%)** | **Baseline** | **Week 6** | **Week 22** | **Week 36** | **Week 52** |
| **Overall** | 336 (100.0) | 302 (89.9) | 258 (76.8) | 216 (64.3) | 171 (50.9) |
| **Medical history** | **Biologic naïve** | 149 (100.0) | 137 (91.9) | 119 (79.9) | 97 (65.1) | 75 (50.3) |
| **Biologic experienced** | 187 (100.0) | 165 (88.2) | 139 (74.3) | 119 (63.6) | 96 (51.3) |
| **Reasons for switching previous biologic treatment** | **Lack of efficacy** | 149 (100.0) | 132 (88.6) | 112 (75.2) | 95 (63.8) | 75 (50.3) |
| **AE** | 33 (100.0) | 29 (87.9) | 23 (69.7) | 16 (48.5) | 14 (42.4) |
| **Other** | 23 (100.0) | 21 (91.3) | 18 (78.3) | 17 (73.9) | 15 (65.2) |

GLM, golimumab; AE, adverse event.

**Supplementary Table S3: Univariable and multivariable analysis showing variables associated with clinical remission at week 52**

Efficacy analysis set (n=336)

|  |  |  |  |
| --- | --- | --- | --- |
| **Predictors** | **n** | **Univariate** | **Multivariate** |
| **OR (95% CI)** | ***P*-value** | **OR (95% CI)** | ***P*-value** |
| **Age (years)** |
|  <65 | 295 | Reference | 0.248 |  |  |
|  ≥65 | 41 | 1.474 (0.763–2.845) |  |  |  |
| **Weight (kg)** |
|  <55.10 | 157 | Reference | 0.102 | Reference | 0.079 |
|  ≥55.10 | 158 | 1.448 (0.929–2.256) |  | 1.565 (0.950–2.579) |  |
| **Gender** |
|  Male | 176 | Reference | 0.405 |  |  |
|  Female | 160 | 1.200 (0.781–1.843) |  |  |  |
| **Disease duration (years)** |
|  <2 | 75 | Reference | 0.197 | Reference | 0.172 |
|  2 to <10 | 155 | 0.722 (0.415–1.256) |  | 0.999 (0.514–1.943) |  |
|  ≥10 | 93 | 1.132 (0.616–2.082) |  | 1.698 (0.821–3.510) |  |
| **Prior surgery related to UC** |
|  No | 328 | Reference | 0.401 |  |  |
|  Yes | 8 | 1.860 (0.437–7.912) |  |  |  |
| **Prior treatment with biologics** |
|  No | 149 | Reference | 0.184 |  | 0.487 |
|  Yes | 187 | 0.746 (0.485–1.149) |  | 0.738 (0.313–1.738) |  |
| **Number of prior biologic treatments** |
|  None | 149 | Reference | 0.285 |  |  |
|  1 | 143 | 0.801 (0.506–1.269) |  |  |  |
|  ≥2 | 44 | 0.589 (0.296–1.170) |  |  |  |
| **Switched from IFX treatment** |
|  No | 239 | Reference | 0.598 |  |  |
|  Yes | 97 | 0.880 (0.548– 1.414) |  |  |  |
| **Switched from ADA treatment** |
|  No | 254 | Reference | 0.125 | Reference | 0.584 |
|  Yes | 82 | 0.673 (0.406–1.116) |  | 0.822 (0.407–1.658) |  |
| **Switched from other biologic treatment** |
|  No | 328 | Reference | 0.138 | Reference | 0.205 |
|  Yes | 8 | 3.390 (0.674–17.041) |  | 4.446 (0.442–44.706) |  |
| **Reason for switch from previous biologics is lack of efficacy** |
|  No | 187 | Reference | 0.081 | Reference | 0.645 |
|  Yes | 149 | 0.680 (0.441–1.049) |  | 0.820 (0.353–1.906) |  |
| **Reason for switch from previous biologics is AEs** |
|  No | 303 | Reference | 0.530 |  |  |
|  Yes | 33 | 0.792 (0.383–1.638) |  |  |  |
| **Reason for switch from previous biologics is lack of efficacy & AEs** |
|  No | 325 | Reference | 0.884 |  |  |
|  Yes | 11 | 0.914 (0.274–3.055) |  |  |  |
| **Prior treatment with tacrolimus/ciclosporin** |
|  No | 272 | Reference | 0.214 |  |  |
|  Yes | 64 | 0.705 (0.405–1.224) |  |  |  |
| **Concomitant use of CSs during the study** |
|  No | 127 | Reference | 0.032\* | Reference | 0.054 |
|  Yes | 209 | 0.616 (0.395–0.960) |  | 0.596 (0.352–1.009) |  |
| **Concomitant use of IMs during the study** |
|  No | 190 | Reference | 0.908 |  |  |
|  Yes | 146 | 0.975 (0.633–1.502) |  |  |  |
| **Disease extent** |
|  Pancolitis | 245 | Reference | 0.615 |  |  |
|  Left-sided | 75 | 0.874 (0.519–1.470) |  |  |  |
|  Proctitis | 13 | 2.502 (0.750–8.432) |  |  |  |
|  Right-sided or segmental | 1 | <0.001 |  |  |  |
|  Other | 2 | NC |  |  |  |
| **Smoking history** |
|  No | 240 | Reference | 0.037\* | Reference | 0.040\* |
|  Yes | 63 | 1.827 (1.038–3.214) |  | 1.911 (1.030–3.546) |  |
| **Patient hospitalisation status at baseline** |
|  Outpatient | 281 | Reference | 0.955 |  |  |
|  Inpatient | 55 | 0.984 (0.551–1.755) |  |  |  |

Factors with *P*<0.2 in the univariate analysis were used for multivariate analysis. Clinical remission was defined as a partial Mayo score of ≤2 [1]. The *P*-value was calculated using the Wald χ2 test. \*, *P*<0.05. An OR>1.0 is favourable for clinical remission, whereas an OR<1.0 is unfavourable for clinical remission compared with reference categories. Where the 95% CI does not cross OR=1.0, there is a statistically significant association between categories. ADA, adalimumab; AE, adverse event; CI, confidence interval; CS, corticosteroid; IFX, infliximab; IM, immunomodulator; NC, not calculated; OR, odds ratio; UC, ulcerative colitis.

**Supplementary Table S4: List of ADRs by preferred term**

Safety analysis set (n=391)

|  |  |  |  |
| --- | --- | --- | --- |
|  | **Serious** | **Non-serious** | **Overall** |
| Safety analysis set, n | 391 | 391 | 391 |
| Patients with ADRs, n (%) | 40 (10.2) | 37 (9.5) | 71 (18.2) |
| Number of ADRs | 49 | 46 | 95 |
| **Type of ADR, patient number (%)** |
| System Organ Class |
|  Preferred Term |
| Infections and infestations | 15 (3.8) | 8 (2.0) | 21 (5.4) |
|  Cellulitis | 1 (0.3) | 0 | 1 (0.3) |
|  Cystitis | 0 | 1 (0.3) | 1 (0.3) |
|  Fungal infection | 0 | 1 (0.3) | 1 (0.3) |
|  Herpes zoster | 2 (0.5) | 3 (0.8) | 5 (1.3) |
|  Influenza | 0 | 1 (0.3) | 1 (0.3) |
|  Nasopharyngitis | 0 | 2 (0.5) | 2 (0.5) |
|  Pneumonia | 3 (0.8) | 0 | 3 (0.8) |
|  Pneumonia legionella | 1 (0.3) | 0 | 1 (0.3) |
|  Pyelonephritis acute | 1 (0.3) | 0 | 1 (0.3) |
|  Anal abscess | 1 (0.3) | 0 | 1 (0.3) |
|  Cytomegalovirus enterocolitis | 1 (0.3) | 0 | 1 (0.3) |
|  Candida sepsis | 1 (0.3) | 0 | 1 (0.3) |
|  Enteritis infectious | 1 (0.3) | 0 | 1 (0.3) |
|  Pneumonia bacterial | 2 (0.5) | 0 | 2 (0.5) |
|  Atypical mycobacterial infection | 1 (0.3) | 0 | 1 (0.3) |
|  Listeria sepsis | 1 (0.3) | 0 | 1 (0.3) |
| Neoplasms benign, malignant and unspecified (incl cysts and polyps) | 2 (0.5) | 1 (0.3) | 3 (0.8) |
|  Acute myeloid leukaemia | 1 (0.3) | 0 | 1 (0.3) |
|  Lymphoma | 1 (0.3) | 0 | 1 (0.3) |
|  Duodenal neoplasm | 0 | 1 (0.3) | 1 (0.3) |
| Blood and lymphatic system disorders | 1 (0.3) | 0 | 1 (0.3) |
|  Disseminated intravascular coagulation | 1 (0.3) | 0 | 1 (0.3) |
|  Leukopenia | 1 (0.3) | 0 | 1 (0.3) |
| Nervous system disorders | 0 | 1 (0.3) | 1 (0.3) |
|  Headache | 0 | 1 (0.3) | 1 (0.3) |
| Eye disorders | 0 | 1 (0.3) | 1 (0.3) |
|  Ocular hyperaemia | 0 | 1 (0.3) | 1 (0.3) |
| Vascular disorders | 1 (0.3) | 1 (0.3) | 2 (0.5) |
|  Hypertension | 0 | 1 (0.3) | 1 (0.3) |
|  Jugular vein thrombosis | 0 | 1 (0.3) | 1 (0.3) |
|  Shock | 1 (0.3) | 0 | 1 (0.3) |
| Respiratory, thoracic and mediastinal disorders | 3 (0.8) | 1 (0.3) | 4 (1.0) |
|  Interstitial lung disease | 3 (0.8) | 0 | 3 (0.8) |
|  Upper respiratory tract inflammation | 0 | 1 (0.3) | 1 (0.3) |
| Gastrointestinal disorders | 11 (2.8) | 1 (0.3) | 11 (2.8) |
|  Colitis ulcerative | 8 (2.0) | 0 | 8 (2.0) |
|  Diarrhoea | 0 | 1 (0.3) | 1 (0.3) |
|  Melaena | 1 (0.3) | 0 | 1 (0.3) |
|  Pancreatitis acute | 1 (0.3) | 0 | 1 (0.3) |
|  Lower gastrointestinal haemorrhage | 1 (0.3) | 0 | 1 (0.3) |
| Hepatobiliary disorders | 2 (0.5) | 0 | 2 (0.5) |
|  Hepatic function abnormal | 2 (0.5) | 0 | 2 (0.5) |
| Skin and subcutaneous tissue disorders | 3 (0.8) | 16 (4.1) | 19 (4.9) |
|  Acne | 0 | 1 (0.3) | 1 (0.3) |
|  Alopecia | 0 | 1 (0.3) | 1 (0.3) |
|  Drug eruption | 0 | 2 (0.5) | 2 (0.5) |
|  Eczema | 0 | 1 (0.3) | 1 (0.3) |
|  Erythema | 0 | 2 (0.5) | 2 (0.5) |
|  Pruritus | 0 | 2 (0.5) | 2 (0.5) |
|  Psoriasis | 0 | 1 (0.3) | 1 (0.3) |
|  Rash | 2 (0.5) | 7 (1.8) | 9 (2.3) |
|  Toxic skin eruption | 1 (0.3) | 0 | 1 (0.3) |
|  Dermatitis psoriasiform | 0 | 2 (0.5) | 2 (0.5) |
| Musculoskeletal and connective tissue disorders | 0 | 3 (0.8) | 3 (0.8) |
|  Arthralgia | 0 | 1 (0.3) | 1 (0.3) |
|  Pain in extremity | 0 | 2 (0.5) | 2 (0.5) |
| Renal and urinary disorders | 1 (0.3) | 0 | 1 (0.3) |
|  Acute kidney injury | 1 (0.3) | 0 | 1 (0.3) |
| Pregnancy, puerperium and perinatal conditions | 1 (0.3) | 0 | 1 (0.3) |
|  Abortion | 1 (0.3) | 0 | 1 (0.3) |
| Reproductive system and breast disorders | 1 (0.3) | 0 | 1 (0.3) |
|  Cervical dysplasia | 1 (0.3) | 0 | 1 (0.3) |
| General disorders and administration site conditions | 1 (0.3) | 6 (1.5) | 7 (1.8) |
|  Discomfort | 0 | 1 (0.3) | 1 (0.3) |
|  Gait disturbance | 0 | 1 (0.3) | 1 (0.3) |
|  Injection site rash | 0 | 1 (0.3) | 1 (0.3) |
|  Malaise | 0 | 1 (0.3) | 1 (0.3) |
|  Pyrexia | 1 (0.3) | 1 (0.3) | 2 (0.5) |
|  Paradoxical drug reaction | 0 | 1 (0.3) | 1 (0.3) |
| Investigations | 4 (1.0) | 3 (0.8) | 6 (1.5) |
|  Blood creatinine increased | 0 | 1 (0.3) | 1 (0.3) |
|  Blood lactate dehydrogenase increased | 0 | 1 (0.3) | 1 (0.3) |
|  C-reactive protein increased | 0 | 1 (0.3) | 1 (0.3) |
|  Neutrophil count decreased | 1 (0.3) | 0 | 1 (0.3) |
|  Platelet count decreased | 1 (0.3) | 0 | 1 (0.3) |
|  White blood cell count decreased | 3 (0.8) | 0 | 3 (0.8) |

Types of ADR or AE are as listed in MedDRA/J ver.23.1. ADR, adverse drug reaction; AE, adverse event.

**Supplementary Table S5: Univariable and multivariable analysis showing variables associated with ADR**

Safety analysis set (n=391)

|  |  |  |  |
| --- | --- | --- | --- |
| **Predictors** | **n** | **Univariate** | **Multivariate** |
| **OR (95% CI)** | ***P*-value** | **OR (95% CI)** | ***P*-value** |
| **Age (years)** |
|  <65 | 340 | Reference | 0.288 |  |  |
|  ≥65 | 51 | 1.466 (0.724–2.967) |  |  |  |
| **Gender** |
|  Male | 200 | Reference | 0.543 |  |  |
|  Female | 191 | 1.173 (0.701–1.963) |  |  |  |
| **Disease duration (years)** |
|  <2 | 80 | Reference | 0.346 |  |  |
|  2 to <10 | 185 | 0.671 (0.354–1.274) |  |  |  |
|  ≥10 | 113 | 0.608 (0.296–1.250) |  |  |  |
| **Comorbidities** |
|  No | 209 | Reference | 0.010\* | Reference | 0.010\* |
|  Yes | 182 | 2.000 (1.183–3.380) |  | 2.000 (1.183–3.380) |  |
| **Allergic history** |
|  No | 273 | Reference | 0.764 |  |  |
|  Yes | 115 | 0.916 (0.518–1.621) |  |  |  |
| **Smoking history** |
|  No | 277 | Reference | 0.295 |  |  |
|  Yes | 74 | 0.676 (0.325–1.405) |  |  |  |
| **Prior treatment with biologics** |
|  No | 168 | Reference | 0.896 |  |  |
|  Yes | 223 | 0.966 (0.575–1.622) |  |  |  |
| **Number of prior use of biologics** |
|  None | 168 | Reference | 0.983 |  |  |
|  1 | 169 | 0.954 (0.548–1.661) |  |  |  |
|  ≥2 | 54 | 1.004 (0.456–2.212) |  |  |  |
| **Prior treatment with IFX** |
|  No | 239 | Reference | 0.914 |  |  |
|  Yes | 152 | 1.029 (0.608–1.742) |  |  |  |
| **Prior treatment with ADA** |
|  No | 280 | Reference | 0.806 |  |  |
|  Yes | 111 | 1.073 (0.610–1.888) |  |  |  |
| **Prior treatment with IFX & ADA** |
|  No | 341 | Reference | 0.718 |  |  |
|  Yes | 50 | 1.148 (0.544–2.420) |  |  |  |
| **Prior treatment with tacrolimus/ciclosporin** |
|  No | 313 | Reference | 0.703 |  |  |
|  Yes | 78 | 0.879 (0.454–1.702) |  |  |  |
| **Concomitant use of CSs during the study** |
|  No | 151 | Reference | 0.875 |  |  |
|  Yes | 240 | 0.959 (0.566–1.623) |  |  |  |
| **Concomitant use of IMs during the study** |
|  No | 218 | Reference | 0.524 |  |  |
|  Yes | 173 | 0.844 (0.501–1.422) |  |  |  |
| **Baseline partial Mayo score** |
|  Mild (0–4) | 133 | Reference | 0.335 |  |  |
|  Moderate (5–7) | 223 | 1.002 (0.579–1.737) |  |  |  |
|  Severe (8, 9) | 28 | 0.332 (0.074–1.493) |  |  |  |
| **Patient hospitalisation status at baseline** |
|  Outpatient | 335 | Reference | 0.756 |  |  |
|  Inpatient | 56 | 1.120 (0.548–2.292) |  |  |  |

Factors with *P*<0.2 in the univariate analysis were used for multivariate analysis. The *P*-value was calculated using the Wald χ2 test. \*, *P*<0.05. An OR>1.0 is favourable for ADR incidence, whereas an OR<1.0 is unfavourable for ADR incidence compared with reference categories. Where the 95% CI does not cross OR=1.0, there is a statistically significant association between categories. ADA, adalimumab; CI, confidence interval; CS, corticosteroid; IFX, infliximab; IM, immunomodulator; OR, odds ratio.

 

**Supplementary Fig. S1: Patient flow diagram**

CRF, case report form; CRP, c-reactive protein.

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**Supplementary Fig. S2: Clinical remission in observed analyses.** Clinical remission rate in all patients (overall), biologic-naïve (naïve), and biologic-experienced (experienced) populations were indicated in the observed analyses. The *P*-value at each timepoint was calculated using Fisher’s exact test. \*, *P* <0.05 (versus naïve population).

 

**Supplementary Fig. S3: Mean partial Mayo scores and serum CRP levels (mg/dl) during the 52-week period (observed analysis)**. (A) Mean partial Mayo scores. (B) Serum CRP levels (mg/dl). Values are mean±95% CI. CI, confidence interval; CRP, c-reactive protein; SD, standard deviation.

 

**Supplementary Fig. S4: Clinical remission in subgroups by previous biologic use (observed analysis)**. (A) Subgroups based on the number of prior biologic treatments. 1st golimumab (GLM); GLM as first biologic, 2nd GLM; GLM as second biologic, ≥3rdGLM; GLM as third- or later biologic. \*, *P* <0.05 (1st GLM versus 2nd GLM). (B) Subgroups based on the reason for switching from previous biologic: lack of efficacy, adverse event (AE), and lack of efficacy and AE. *P*-values were calculated using Fisher’s exact test or the Wald χ2 test.

 

**Supplementary Fig. S5: Factors associated with changes in partial Mayo score by univariate analysis.** Patient factors affecting GLM treatment effectiveness were determined by forest plot analysis. Changes in mean partial Mayo scores from baseline to week 52 were used. Patients aged <65 or ≥65 years were classified as non-elderly or elderly, respectively. *P*-values were calculated using an independent *t*-test. \*, *P* <0.05. CI, confidence interval; CS, corticosteroid; GLM, golimumab; IMs, immunomodulators. Where the CI does not cross the vertical line (0.0), a statistically significant difference exists between two groups.

 

**Supplementary Fig. S6: Clinical remission in subgroups according to concomitant corticosteroid (CS) use (observed analysis).** Values placed in the centre of the bar indicate the proportion of patients with or without CS among remitters at each time point.

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**Supplementary Fig. S7: Proportion of patients with Mayo endoscopic sub-scores of 0 or 1 (observed analysis).** Values placed in the centre of the bar indicate the proportion of patients with Mayo endoscopic sub-scores of 0 or 1 at each timepoint.

 

**Supplementary Fig. S8:** **Faecal calprotectin concentration (μg/g) during the 52-week period (observed analysis).** Values were expressed as the median and 95% CI. CI, confidence interval; SD, standard deviation.