**Supplemental tables**

**Supplemental Table 1. Baseline Demographics and Patient Characteristics (full list)**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Glatopa cohort (all patients)** | | | **Copaxone cohort (all patients)** | |  |  |
|  | n/mean | | %/SD | n/mean | %/SD | ***p-*value** | **Standardized Difference** |
| **Sample size, n (%)** | 158 | | 100% | 158 | 100% |  |  |
| **Gender, n (%)** |  | |  |  |  |  |  |
| Female | 118 | | 75% | 118 | 75% | 1.000 | 0 |
| **Age at index, n (%)** |  | |  |  |  |  |  |
| 18-39 | 24 | | 15% | 27 | 17% | 0.646 | -5 |
| 40-64 | 119 | | 75% | 119 | 75% | 1.000 | 0 |
| 65+ | 15 | | 10% | 12 | 8% | 0.546 | 7 |
| Mean, SD | 49.9 | | 11.02 | 49.9 | 10.94 | 0.988 | 0 |
| **Health plan type, n (%)** |  | |  |  |  |  |  |
| HMO | 33 | | 21% | 46 | 29% | 0.091 | -19 |
| PPO | 98 | | 62% | 91 | 58% | 0.422 | 9 |
| CDHP | 27 | | 17% | 21 | 13% | 0.347 | 11 |
| **Health plan line of business, n (%)** |  | |  |  |  |  |  |
| Commercial | 146 | | 92% | 127 | 80% | 0.002 | 36 |
| Medicare Advantage | 9 | | 6% | 23 | 15% | 0.009 | -30 |
| Medicare other | 3 | | 2% | 8 | 5% | 0.125 | -17 |
| **Geographic region of patient residence, n (%)** |  | |  |  |  |  |  |
| Northeast | 31 | | 20% | 38 | 24% | 0.341 | -11 |
| Midwest | 53 | | 34% | 51 | 32% | 0.811 | 3 |
| South | 39 | | 25% | 31 | 20% | 0.278 | 12 |
| West | 35 | | 22% | 38 | 24% | 0.689 | -5 |
| **Year of index date, n (%)** |  | |  |  |  |  |  |
| 2014 | 0 | | 0% | 39 | 25% |  | -81 |
| 2015 | 135 | | 85% | 97 | 61% | 0.414 | 56 |
| 2016 | 19 | | 12% | 17 | 11% | 0.723 | 4 |
| 2017 | 4 | | 3% | 5 | 3% | 0.735 | -4 |
| **Individual QCI comorbidities, n (%)** |  | |  |  |  |  |  |
| Congestive heart failure | 0 | | 0% | 1 | 1% | 0.317 | -14 |
| Peripheral vascular disease | 3 | | 2% | 6 | 4% | 0.310 | -12 |
| Cerebrovascular disease | 1 | | 1% | 3 | 2% | 0.314 | -8 |
| Dementia | 1 | | 1% | 2 | 1% | 0.562 | 0 |
| Chronic obstructive pulmonary disease | 11 | | 7% | 14 | 9% | 0.532 | -7 |
| Connective tissue/rheumatic disease | 0 | | 0% | 3 | 2% | 0.082 | -20 |
| Liver disease: |  | |  |  |  |  |  |
| Mild | 5 | | 3% | 4 | 3% | 0.735 | 0 |
| Moderate or severe | 1 | | 1% | 0 | 0% | 0.317 | 14 |
| Diabetes without chronic complications | 7 | | 4% | 10 | 6% | 0.454 | -9 |
| Diabetes with chronic complications | 1 | | 1% | 1 | 1% | 1.000 | 0 |
| Cancer | 4 | | 3% | 0 | 0% | 0.044 | 25 |
| **QCI, mean, SD** | 0.32 | | 0.800 | 0.35 | 0.830 | 0.908 | -4 |
| **QCI Categories, n (%)** |  | |  |  |  |  |  |
| 0 | 127 | | 80% | 127 | 80% | 1.000 | 0 |
| 1 | 19 | | 12% | 15 | 10% | 0.468 | 8 |
| 2 | 9 | | 6% | 11 | 7% | 0.644 | -5 |
| ≥ 3 | 3 | | 2% | 5 | 3% | 0.474 | -8 |
| **Targeted comorbidities of Interest, n (%)** |  | |  |  |  |  |  |
| High blood pressure | 36 | | 23% | 37 | 23% | 0.894 | 0 |
| High cholesterol | 8 | | 5% | 10 | 6% | 0.627 | -4 |
| Chronic kidney disease | 3 | | 2% | 3 | 2% | 1.000 | 0 |
| Chronic liver disease | 3 | | 2% | 3 | 2% | 1.000 | 0 |
| Arthritis5 | 15 | | 9% | 20 | 13% | 0.370 | -13 |
| Diabetes | 7 | | 4% | 11 | 7% | 0.332 | -13 |
| Unspecified acquired hypothyroidism | 18 | | 11% | 14 | 9% | 0.456 | 7 |
| Chronic fatigue | 0 | | 0% | 2 | 1% | 0.156 | -14 |
| Stroke | 0 | | 0% | 1 | 1% | 0.317 | -14 |
| **MS-related comorbidities of Interest, n (%)** |  | |  |  |  |  |  |
| Neuropathic pain | 2 | | 1% | 9 | 6% | 0.032 | -27 |
| Ataxia | 2 | | 1% | 2 | 1% | 1.000 | 0 |
| Urinary tract infection | 12 | | 8% | 19 | 12% | 0.186 | -13 |
| Pressure ulcers | 2 | | 1% | 2 | 1% | 1.000 | 0 |
| Anxiety | 10 | | 6% | 17 | 11% | 0.159 | -18 |
| Depression | 30 | | 19% | 27 | 17% | 0.661 | 5 |
| Muscle Weakness | 7 | | 4% | 9 | 6% | 0.608 | -9 |
| Optic neuritis | 3 | | 2% | 7 | 4% | 0.199 | -12 |
| Myelitis associated with MS | 0 | | 0% | 1 | 1% | 0.317 | -14 |
| Paraparesis | 1 | | 1% | 1 | 1% | 1.000 | 0 |
| Diplopia | 0 | | 0% | 2 | 1% | 0.156 | -14 |
| Neuropathy NOS/neuralgia NOS | 7 | | 4% | 7 | 4% | 1.000 | 0 |
| Cognitive dysfunction | 1 | | 1% | 0 | 0% | 0.317 | 14 |
| Gait dysfunction | 10 | | 6% | 15 | 9% | 0.297 | -11 |
| Sensory changes | 5 | | 3% | 5 | 3% | 1.000 | 0 |
| Bladder problems | 9 | | 6% | 10 | 6% | 0.813 | 0 |
| Bowel dysfunction | 6 | | 4% | 2 | 1% | 0.152 | 19 |
| Spasticity | 7 | | 4% | 4 | 3% | 0.357 | 5 |
| Vertigo | 34 | | 22% | 36 | 23% | 0.786 | -2 |
| **Disease modifying medications** |  | |  |  |  |  |  |
| Disease modifying medications (excluding Copaxone 20 mg or Glatopa), n (%) | 0 | | 0% | 3 | 2% | 0.082 | -20 |
| Disease modifying medications (excluding Copaxone 20 mg or Glatopa ), mean, SD | 0.0 | | 0.00 | 0.0 | 0.14 | 0.082 | -20 |
| Copaxone 20 mg, n (%) | 146 | | 92% | 146 | 92% | 1.000 | 0 |
| Copaxone 20 mg, mean, SD | 3.8 | | 2.08 | 3.8 | 2.08 | 1.000 | 0 |
| **Other Medications of Interest, n (%)** |  | |  |  |  |  |  |
| Corticosteroids | 25 | | 16% | 31 | 20% | 0.377 | -10 |
| Corticotropins | 0 | | 0% | 1 | 1% | 0.317 | -14 |
| Muscle relaxants | 31 | | 20% | 39 | 25% | 0.278 | -12 |
| Antidepressants | 57 | | 36% | 59 | 37% | 0.815 | -2 |
| Stimulants | 15 | | 9% | 19 | 12% | 0.317 | -10 |
| Dalfampridine | 6 | | 4% | 8 | 5% | 0.585 | -5 |
| Benzodiazepines | 18 | | 11% | 27 | 17% | 0.147 | -17 |
| Anticonvulsants | 33 | | 21% | 42 | 27% | 0.234 | -14 |
| Antidiarrheals | 1 | 1% | | 0 | 0% | 0.317 | 14 |
| Antibiotics | 53 | 34% | | 69 | 44% | 0.064 | -21 |
| Non-steroidal anti-inflammatory (NSAIDs) | 8 | 5% | | 21 | 13% | 0.011 | -28 |
| Antipsychotics | 6 | 4% | | 5 | 3% | 0.759 | 5 |
| Narcotics | 25 | 16% | | 38 | 24% | 0.067 | -20 |
| Hypnotics | 11 | 7% | | 17 | 11% | 0.235 | -14 |

DMTs included Glatopa and Copaxone, as well as interferon beta 1-a/1-b, mitoxantrone, natalizumab, fingolimod, teriflunomide, dimethyl fumarate, and alemtuzumab.

**Supplemental Table 2. Baseline Healthcare Resource Utilization**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Glatopa cohort (all patients)** | | **Copaxone cohort (all patients)** | |  |  |
|  | n/mean | %/SD | n/mean | %/SD | ***p-*value** | **Standardized Difference** |
| **Sample size, n (%)** | 158 | 100% | 158 | 100% |  |  |
| **All-Cause Medical utilization** |  |  |  |  |  |  |
| Inpatient visits, n (%) with ≥1 visit | 13 | 8% | 10 | 8% | 0.516 | 0 |
| Inpatient visits, Number of visits per patient, mean, SD | 0.09 | 0.33 | 0.06 | 0.24 | 0.501 | 10 |
| Length of stay (LOS) days per patient with ≥1 visit, mean, SD | 4.46 | 3.6 | 3.9 | 2.23 | 0.516 | 19 |
| ER visits, n (%) with ≥1 visit | 13 | 8% | 18 | 11% | 0.344 | -10 |
| ER visits, Number of visits per patient, mean, SD | 0.13 | 0.7 | 0.13 | 0.39 |  | 0 |
| Outpatient visits, n (%) with ≥1 visit | 150 | 95% | 148 | 94% | 0.627 | 4 |
| Outpatient visits, Number of visits per patient, mean, SD | 10.93 | 14.55 | 11.42 | 12.06 | 0.102 | -4 |
| **All-Cause Pharmacy utilization** |  |  |  |  |  |  |
| n (%) with ≥ 1 fill | 157 | 99% | 156 | 99% | 0.562 | 0 |
| Number of fills per patient, mean, SD | 13.1 | 9.98 | 14.15 | 9.08 | 0.140 | -11 |
| **MS-Related medical utilization** |  |  |  |  |  |  |
| Inpatient visits, n (%) with ≥1 visit | 4 | 3% | 0 | 0% | 0.044 | 25 |
| Inpatient visits, Number of visits per patient, mean, SD | 0.0 | 0.16 | 0.0 | 0 | 0.046 | 27 |
| Length of stay (LOS) days per patient with ≥1 visit, mean, SD | 6.3 | 4.03 | 0.0 | 0 | 0.046 | 219 |
| ER visits, n (%) with ≥1 visit | 0 | 0% | 2 | 1% | 0.156 | -14 |
| ER visits, Number of visits per patient, mean, SD | 0.0 | 0 | 0.0 | 0.11 | 0.157 | -13 |
| Outpatient visits, n (%) with ≥1 visit | 106 | 67% | 112 | 71% | 0.466 | -9 |
| Outpatient visits, Number of visits per patient, mean, SD | 2.0 | 2.87 | 2.7 | 5.17 | 0.194 | -17 |
| Neurologist6 office visits, n (%) with ≥1 visit | 63 | 40% | 83 | 53% | 0.024 | -26 |
| Neurologist office visits,Number of visits per patient, mean, SD | 0.5 | 0.59 | 0.7 | 0.88 | 0.006 | -37 |
| **MS-related pharmacy utilization** |  |  |  |  |  |  |
| Disease modifying therapies |  |  |  |  |  |  |
| n (%) with ≥ 1 fill | 147 | 93% | 147 | 93% | 1.000 | 0 |
| Number of fills per patient, mean, SD | 4.0 | 2.29 | 4.0 | 2.25 | 0.722 | -2 |

DMTs included Glatopa and Copaxone, as well as interferon beta 1-a/1-b, mitoxantrone, natalizumab, fingolimod, teriflunomide, dimethyl fumarate, and alemtuzumab.

**Supplemental Table 3. Follow Up Healthcare Resource Utilization**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Glatopa cohort (all patients)** | | **Copaxone cohort (all patients)** | |  |  |
|  | n/mean | %/SD | n/mean | %/SD | ***p-*value** | **Standardized Difference** |
| **Sample size, n (%)** | 158 | 100% | 158 | 100% |  |  |
| **All-Cause Medical utilization** |  |  |  |  |  |  |
| Inpatient visits |  |  |  |  |  |  |
| n (%) with ≥1 visit | 12 | 8% | 10 | 6% | 0.658 | 8 |
| Number of visits per patient, mean, SD | 0.1 | 0.48 | 0.1 | 0.49 | 0.665 | 2 |
| Length of stay (LOS) days per patient with ≥1 visit, mean, SD | 7.3 | 9.59 | 7.7 | 9.55 | 0.679 | -5 |
| Emergency room (ER) visits |  |  |  |  |  |  |
| n (%) with ≥1 visit | 15 | 9% | 19 | 12% | 0.468 | -10 |
| Number of visits per patient, mean, SD | 0.2 | 0.71 | 0.2 | 0.79 | 0.470 | -7 |
| Outpatient visits |  |  |  |  |  |  |
| n (%) with ≥1 visit | 139 | 88% | 143 | 91% | 0.468 | -10 |
| Number of visits per patient, mean, SD | 15.7 | 22.59 | 17.2 | 23.51 | 0.323 | -6 |
| Office visits |  |  |  |  |  |  |
| n (%) with ≥1 visit | 128 | 81% | 140 | 89% | 0.060 | -23 |
| Number of visits per patient, mean, SD | 4.7 | 5.43 | 5.2 | 5.55 | 0.297 | -8 |
| Laboratory tests |  |  |  |  |  |  |
| n (%) with ≥1 test | 105 | 66% | 107 | 68% | 0.811 | -4 |
| Number of tests per patient, mean, SD | 3.1 | 5.44 | 2.9 | 4.21 | 0.918 | 5 |
| **All-Cause Pharmacy utilization** |  |  |  |  |  |  |
| All-Cause Pharmacy dispensing |  |  |  |  |  |  |
| n (%) with ≥ 1 fill | 158 | 100% | 158 | 100% | - | - |
| Number of fills per patient, mean, SD | 18.7 | 17.38 | 20.4 | 17.23 | 0.283 | -10 |
| Medications of interest\* |  |  |  |  |  |  |
| n (%) with ≥ 1 fill | 113 | 72% | 126 | 80% | 0.088 | -19 |
| Number of fills per patient, mean, SD | 6.3 | 9.83 | 8.4 | 11.22 | 0.011 | -20 |
| **MS-Related medical utilization** |  |  |  |  |  |  |
| Inpatient visits |  |  |  |  |  |  |
| n (%) with ≥1 visit | 5 | 3% | 6 | 4% | 0.759 | -5 |
| Number of visits per patient, mean, SD | 0.1 | 0.32 | 0.1 | 0.45 | 0.762 | -5 |
| Length of stay (LOS) days per patient with ≥1 visit, mean, SD | 13.2 | 11.71 | 7.7 | 11.55 | 0.777 | 48 |
| ER visits |  |  |  |  |  |  |
| n (%) with ≥1 visit | 2 | 1% | 4 | 3% | 0.410 | -14 |
| Number of visits per patient, mean, SD | 0.0 | 0.25 | 0.0 | 0.35 | 0.414 | -3 |
| Outpatient visits |  |  |  |  |  |  |
| n (%) with ≥1 visit | 110 | 70% | 115 | 73% | 0.534 | -7 |
| Number of visits per patient, mean, SD | 3.6 | 9.53 | 4.8 | 16.60 | 0.224 | -9 |
| Office visits |  |  |  |  |  |  |
| n (%) with ≥1 visit | 106 | 67% | 106 | 67% | 1.000 | 0 |
| Number of visits per patient, mean, SD | 1.1 | 1.15 | 1.4 | 1.59 | 0.383 | -17 |
| Neurologist office visits |  |  |  |  |  |  |
| n (%) with ≥1 visit | 80 | 51% | 90 | 57% | 0.259 | -12 |
| Number of visits per patient, mean, SD | 0.7 | 0.89 | 1.0 | 1.23 | 0.101 | -24 |
| Laboratory tests |  |  |  |  |  |  |
| n (%) with ≥1 test | 35 | 22% | 39 | 25% | 0.491 | -7 |
| Number of tests per patient, mean, SD | 0.4 | 0.91 | 0.5 | 1.20 | 0.497 | -9 |
| **MS-related pharmacy utilization** |  |  |  |  |  |  |
| Dalfampridine |  |  |  |  |  |  |
| n (%) with ≥ 1 fill | 6 | 4% | 8 | 5% | 0.585 | -5 |
| Number of fills per patient, mean, SD | 0.2 | 1.27 | 0.3 | 1.49 | 0.577 | -7 |
| Disease modifying therapies |  |  |  |  |  |  |
| n (%) with ≥ 1 fill | 158 | 100% | 158 | 100% | - | - |
| Number of fills per patient, mean, SD | 6.7 | 4.02 | 6.1 | 4.08 | 0.030 | 13 |
| Disease modifying therapies and/or dalfampridine |  |  |  |  |  |  |
| n (%) with ≥ 1 fill | 158 | 100% | 158 | 100% | - | - |
| Number of fills per patient, mean, SD | 6.9 | 4.34 | 6.4 | 4.33 | 0.142 | 10 |

\*Medications of interest include: Corticosteroids, Corticotropins, Muscle relaxants, Antidepressants, Stimulants, Ampyra , Benzodiazepines, Anticonvulsants, Antidiarrheals, Antibiotics, NSAIDs, Antipsychotics, Narcotics, Hypnotics , Bladder medications)

**Supplemental Table 4. Sensitivity Analyses Results**

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | **Full sample** | | **Full sample** | |  | **Commercial plan** | | **Commercial plan** | |  | **Same index year** | | **Same index year** | |  |
|  | **Glatopa** | | **Copaxone** | |  | **Glatopa** | | **Copaxone** | |  | **Glatopa** | | **Copaxone** | |  |
|  | n/mean | %/SD | n/mean | %/SD | p-value | n/mean | %/SD | n/mean | %/SD | p- value | n/mean | %/SD | n/mean | %/SD | p-value |
| **Sample size, n (%)** | 290 |  | 290 |  |  | 121 |  | 121 |  |  | 115 |  | 115 |  |  |
| **Baseline** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Patients n (%) with ≥1 relapse(s) | 16 | 6% | 16 | 6% | 1.000 | 12 | 10% | 12 | 10% | 1.000 | 4 | 3% | 4 | 3% | 1.000 |
| Number of relapses per patient | 0.07 | 0.304 | 0.07 | 0.304 | 1.000 | 0.12 | 0.37 | 0.12 | 0.37 | 1.000 | 0.03 | 0.184 | 0.03 | 0.184 | 1.000 |
| Annualized relapse rate | 0.14 | 0.607 | 0.14 | 0.607 | 1.000 | 0.23 | 0.739 | 0.23 | 0.739 | 1.000 | 0.07 | 0.368 | 0.07 | 0.368 | 1.000 |
| **Follow-up** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Patients n (%) with ≥1 relapse(s) | 26 | 9% | 41 | 14% | 0.051 | 10 | 8% | 20 | 17% | 0.051 | 5 | 4% | 16 | 14% | 0.012 |
| Number of relapses per patient | 0.14 | 0.514 | 0.22 | 0.646 | 0.049 | 0.12 | 0.432 | 0.28 | 0.777 | 0.049 | 0.04 | 0.205 | 0.23 | 0.714 | 0.011 |
| Annualized relapse rate | 0.24 | 1.434 | 0.28 | 0.8 | 0.048 | 0.13 | 0.514 | 0.34 | 0.926 | 0.044 | 0.04 | 0.205 | 0.28 | 0.866 | 0.01 |
| Incidence rate of relapse | 0.13 |  | 0.21 |  |  | 0.13 |  | 0.28 |  |  | 0.07 |  | 0.24 |  |  |
| Time to relapse/end of FU (days) | 253 | 132.5 | 243 | 136.1 | 0.324 | 233 | 137.1 | 216 | 140.3 | 0.335 | 234 | 137.4 | 214 | 141.1 | 0.237 |
| Mean FU time (days) | 271 |  | 271 |  |  | 248 |  | 249 |  |  | 242 |  | 243 |  |  |
| **Costs at follow-up** |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| All-cause Rx | N/A | N/A | N/A | N/A | N/A | $44,520 | $24,296 | $46,319 | $29,871 | 0.782 | $45,630 | $24,693 | $48,015 | $31,578 | 0.638 |
| All-cause medical | $6,444 | $13,623 | $7,406 | $19,452 | 0.260 | $4,617 | $8,870 | $8,103 | $21,965 | 0.099 | $4,509 | $9,618 | $7,992 | $22,348 | 0.087 |
| All-cause total | N/A | N/A | N/A | N/A | N/A | $49,137 | $26,991 | $54,422 | $38,365 | 0.429 | $50,139 | $26,517 | $56,007 | $39,472 | 0.358 |
| MS-related Rx | N/A | N/A | N/A | N/A | N/A | $42,100 | $23,191 | $43,734 | $28,521 | 0.400 | $43,183 | $23,334 | $45,562 | $30,049 | 0.561 |
| MS-related medical | $2,499 | $9,376 | $2,568 | $10,614 | 0.342 | $1,921 | $6,078 | $3,627 | $15,394 | 0.785 | $1,562 | $5,812 | $3,502 | $15,731 | 0.252 |
| MS-related total | N/A | N/A | N/A | N/A | N/A | $44,021 | $24,462 | $47,361 | $33,675 | 0.721 | $44,746 | $23,694 | $49,064 | $34,840 | 0.510 |

FU=follow-up