Real-World Analysis of Treatment Patterns Among Hospitalized Patients with Pulmonary Arterial Hypertension

Authors: Adesuwa Ogbomo¹, Yuen Tsang², Furaha Kariburyo¹, Wan-Lun Tsai¹, Sumeet Panjabi².

Affiliations:
1. STATinMED Research, Ann Arbor, MI, USA
2. Janssen Scientific Affairs, Titusville, NJ, USA

Corresponding Author:

Adesuwa Ogbomo
Senior Manager, Real World Evidence
STATinMED Research
E-mail: aogbomo@statinmed.com
Phone: 734-222-5426
Supplementary Table 1. Ad-Hoc Descriptive Baseline Characteristics of Hospitalized Patients With PAH

| Patient Characteristics          | MarketScan (N=2,034) | IQVIA (N=1,403) |
|---------------------------------|----------------------|-----------------|
|                                 | N/Mean (%/SD)        | N/Mean (%/SD)   |
| Age (years)                     | 56.8 (13.0)          | 56.8 (12.6)     |
| Age Group (years)               |                      |                 |
| 18-54                            | 747 (36.7%)          | 504 (35.9%)     |
| 55-64                            | 822 (40.4%)          | 673 (48.0%)     |
| ≥65                              | 465 (22.9%)          | 226 (16.1%)     |
| Sex                              |                      |                 |
| Male                             | 783 (38.5%)          | 494 (35.2%)     |
| Female                           | 1251 (61.5%)         | 909 (64.8%)     |
| US Geographic Region            |                      |                 |
| Northeast                        | 351 (17.3%)          | 297 (21.2%)     |
| North Central                    | 532 (26.2%)          | 287 (20.5%)     |
| South                            | 780 (38.4%)          | 612 (43.6%)     |
| West/Other                       | 371 (18.2%)          | 207 (14.8%)     |
| Charlson Comorbidity Index      |                      |                 |
| Mean CCI                         | 4.1 (2.9)            | 3.8 (2.7)       |
| Comorbidities                    |                      |                 |
| Left heart failure               | 58 (2.9%)            | 40 (2.9%)       |
| Idiopathic pulmonary fibrosis    | 103 (5.1%)           | 77 (5.5%)       |
| Chronic obstructive pulmonary disease | 633 (31.1%)      | 373 (26.6%)     |
| Sleep disorders                  | 265 (13.0%)          | 132 (9.4%)      |
| Patient Characteristics                                    | MarketScan (N=2,034) | IQVIA (N=1,403) |
|-----------------------------------------------------------|----------------------|-----------------|
|                                                           | N/Mean (%/SD)        | N/Mean (%/SD)   |
| Diabetes                                                  | 618 (30.4%)          | 455 (32.4%)     |
| Hypertension                                              | 1350 (66.4%)         | 872 (62.2%)     |
| Coronary artery disease/ischemic heart disease            | 578 (28.4%)          | 364 (25.9%)     |
| Lower respiratory disease                                 | 585 (28.8%)          | 397 (28.3%)     |
| Apnea                                                     | 442 (21.7%)          | 275 (19.6%)     |
| Obesity                                                   | 464 (22.8%)          | 305 (21.7%)     |
| Renal insufficiency                                       | 514 (25.3%)          | 337 (24.0%)     |
| Pneumonia                                                 | 333 (16.4%)          | 228 (16.3%)     |
| Congenital heart disease                                  | 220 (10.8%)          | 123 (8.8%)      |
| Depression                                                | 320 (15.7%)          | 171 (12.2%)     |
| Liver disease                                             | 265 (13.0%)          | 133 (9.5%)      |
| Interstitial lung disease                                 | 298 (14.7%)          | 236 (16.8%)     |
| Venous thromboembolism                                    | 257 (12.6%)          | 164 (11.7%)     |
| **Baseline PAH Medications**                              |                      |                 |
| Phosphodiesterase (Type 5) enzyme inhibitors (PDE-5)      | 1188 (58.4%)         | 920 (65.6%)     |
| Endothelin receptor antagonists (ERAs)                    | 664 (32.7%)          | 523 (37.3%)     |
| Prostacyclin pathway agents                               | 309 (15.2%)          | 133 (9.5%)      |
| Soluble guanylate cyclase stimulators                     | 128 (6.3%)           | 92 (6.6%)       |
| **All-cause index hospitalization**                       |                      |                 |
| Length of stay (days)                                     | 5.9 (7.4)            | 7.8 (8.9)       |

*Medication categories were not mutually exclusive.*
## Supplementary Table 2. Ad-Hoc Database Treatment Status Pre- and Post-hospitalization

| Treatment Variables | MarketScan |         | IQVIA |         |
|---------------------|------------|---------|-------|---------|
|                     | All Hospitalized Patients (2,034) | All Hospitalized Patients (1,403) |
|                     | N/Mean | %/SD | N/Mean | %/SD |
| Treatment status pre-hospitalization |         |       |       |       |
| Monotherapy         | 1194 | 58.7% | 846 | 60.3% |
| Double therapy      | 424 | 20.85% | 334 | 23.81% |
| Triple therapy      | 132 | 6.49% | 47 | 3.35% |
| No PAH therapy      | 284 | 13.96% | 175 | 12.47% |
| Treatment status post-hospitalization |         |       |       |       |
| Monotherapy         | 942 | 46.31% | 683 | 48.68% |
| Double therapy      | 395 | 19.42% | 314 | 22.38% |
| Triple therapy      | 120 | 5.90% | 37 | 2.64% |
| No PAH therapy      | 577 | 28.37% | 369 | 26.30% |

### Treatment Status from Pre- to post-hospitalization

Among patients with evidence of **Monotherapy** in the pre-hospitalization

| N=1194 | N=846 |
|--------|-------|
| Monotherapy to monotherapy | 816 | 68.34% | 597 | 70.57% |
| Monotherapy to the same monotherapy | 794 | 97.30% | 588 | 98.49% |
| Monotherapy to a different monotherapy | 22 | 2.70% | 9 | 1.51% |
| Monotherapy to double therapy | 72 | 6.03% | 54 | 6.38% |
| Monotherapy to triple therapy | 7 | 0.59% | 2 | 0.24% |
| Monotherapy to no PAH therapy | 299 | 25.04% | 193 | 22.81% |

Among patients with evidence of **double therapy** in the pre-hospitalization

| N=424 | N=334 |
|--------|-------|
| Double therapy to Monotherapy | 66 | 15.57% | 55 | 16.47% |
| Double therapy to double therapy | 293 | 69.10% | 244 | 73.05% |
| Double therapy to the same double therapy | 284 | 96.93% | 233 | 95.49% |
| Double therapy to a different double therapy | 9 | 3.07% | 11 | 4.51% |
| Double therapy to triple therapy | 18 | 4.25% | 10 | 2.99% |
| Double therapy to no PAH therapy | 47 | 11.08% | 25 | 7.49% |

Among patients with evidence of **Triple therapy** in the pre-hospitalization

| N=132 | N=47 |
|--------|------|
| Triple therapy to monotherapy | 12 | 9.09% | 5 | 10.64% |
| Treatment Variables                               | MarketScan                  | IQVIA                      |
|--------------------------------------------------|-----------------------------|----------------------------|
|                                                  | All Hospitalized Patients (2,034) | All Hospitalized Patients (1,403) |
|                                                  | N/Mean %/SD                  | N/Mean %/SD                |
| Triple therapy to double therapy                 | 23  17.42%                  | 13  27.66%                 |
| Triple therapy to triple therapy                 | 93  70.45%                  | 25  53.19%                 |
| Triple therapy to the same triple therapy        | 93  100.00%                 | 25  100.00%                |
| Triple therapy to a different triple therapy     | 0   0.00%                   | 0   0.00%                  |
| Triple therapy to no PAH therapy                 | 4   3.03%                   | 4   8.51%                  |

Among patients with no PAH therapy in the pre-hospitalization

| No PAH Therapy to monotherapy                    | N=284                       | N=175                      |
|--------------------------------------------------|-----------------------------|----------------------------|
| No PAH Therapy to double therapy                 | 48  16.90%                  | 26  14.86%                 |
| No PAH Therapy to triple therapy                 | 7   2.46%                   | 3   1.71%                  |
| No PAH Therapy to no PAH therapy                 | 2   0.70%                   | 0   0.00%                  |
| No PAH therapy to no PAH therapy                 | 227  79.93%                 | 146  83.43%                |

PAH: pulmonary arterial hypertension; SD: standard deviation.