2-2012

Association between Triptan Use and Cardiac Contraindications in an Insured Migraine Population

Daisy Ng-Mak, PhD
*Global Health Outcomes, Merck Sharp & Dohme Corp., West Point, PA, USA*

Valerie P. Pracilio, MPH
*Jefferson School of Population Health*

Stephen Silberstein, MD
*Jefferson Headache Center*

Joseph Couto, PharmD, MBA
*Jefferson School of Population Health*

Cary Sennett, MD, PhD
*MedAssurant, Inc.*

*See next page for additional authors*

**Recommended Citation**

Ng-Mak, PhD, Daisy; Pracilio, MPH, Valerie P.; Silberstein, MD, Stephen; Couto, PharmD, MBA, Joseph; Sennett, MD, PhD, Cary; Hopkins, RN, Mary; Bumbaugh, Jon; and Goldfarb, Neil I., "Association between Triptan Use and Cardiac Contraindications in an Insured Migraine Population" (2012). *College of Population Health Lectures, Presentations, Workshops*. Paper 23. https://jdc.jefferson.edu/hplectures/23
Association between Triptan Use and Cardiac Contraindications in an Insured Migraine Population
Daisy Ng-Mak, PhD¹, Valerie P. Pracilio, MPH², Stephen Silberstein, MD³, Joseph Couto, PharmD, MBA², Cary Sennett, MD, PhD⁴, Mary Hopkins, RN¹, Jon Bumbaugh⁵, and Neil I. Goldfarb⁶
¹Global Health Outcomes, Merck Sharp & Dohme Corp., West Point, PA, USA
²Jefferson School of Population Health, Philadelphia, PA, USA
³Jefferson Headache Center, Philadelphia, PA, USA
⁴MedAssurant, Inc., Bowie, MD, USA

**Methods: Study Population**

- Ten representative commercial and/or Medicaid health plans in the MedAssurant Medical Outcomes Research for Effectiveness and Economics Registry (MORE² Registry™) were included in the study.
- The reporting year (the year of claims data on which measurement was based) was 2009.
- Only adult members between ages 18 and 64, with both medical and pharmacy benefits, were eligible for inclusion (N = 2.5 million, across the 10 plans).
- The Migraine Population was identified through claims and pharmacy data as patients having at least one of the following criteria:
  - 1 or more claims/encounter(s) for migraine, or
  - 2 or more “episodes” of headache reflected by multiple claims/encounters (“recurrent headache”) > 7 days apart, or
  - 1 or more prescription(s) for a triptan or migraine analgesic
- Individuals with a diagnosis of subarachnoid hemorrhage, brain tumor, and/or intracranial bleed were excluded.

Triptans were identified through pharmacy claims based on at least one prescription for any 5-HT₁₅,₁₀ receptor agonist (triptan).

### Distribution of Triptan Prescriptions AND Cardiac Contraindications

<table>
<thead>
<tr>
<th>Condition</th>
<th>Identification</th>
<th>Number of Triptans (total)</th>
<th>Number of Triptans (total)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ischemic Cardiovascular Syndromes</td>
<td>Angina</td>
<td>410.3-413.9</td>
<td>309.0-309.9</td>
</tr>
<tr>
<td>Myocardial Infarction</td>
<td>414.1-414.9</td>
<td>309.0-309.9</td>
<td></td>
</tr>
<tr>
<td>Myocardial Ischemia</td>
<td>414.1-414.9</td>
<td>309.0-309.9</td>
<td></td>
</tr>
<tr>
<td>Coronary Artery Disease (CAD)</td>
<td>414.1-414.9</td>
<td>309.0-309.9</td>
<td></td>
</tr>
<tr>
<td>Peripheral Vascular Syndromes</td>
<td>Ischemic Bowel Disease</td>
<td>443.1-443.3</td>
<td>357.9</td>
</tr>
<tr>
<td>Uncontrolled Hypertension</td>
<td>400.0-405.9</td>
<td>309.0-309.9</td>
<td></td>
</tr>
<tr>
<td>Cardiovascular Syndromes</td>
<td>Stroke</td>
<td>430.0-437.3</td>
<td>438.9</td>
</tr>
<tr>
<td>Carotid Artery Disease</td>
<td>438.9</td>
<td>309.0-309.9</td>
<td></td>
</tr>
</tbody>
</table>

**Results**

### Migraine Quality of Care Measurement Definitions

<table>
<thead>
<tr>
<th>Measure</th>
<th>Numerator</th>
<th>Denominator</th>
</tr>
</thead>
<tbody>
<tr>
<td>RX.2 Prescription for a Triptan AND Cardiac Contraindication</td>
<td>Any patient in the Migraine Population who had a prescription for a triptan during the measurement year AND had a cardiac contraindication as determined by at least one prescription for a triptan during the measurement year.</td>
<td></td>
</tr>
<tr>
<td>RX.8 Prescription for Triptan AND Cardiac Contraindication</td>
<td>Any patient in the Migraine Population who had a prescription for a triptan during the measurement year AND had a cardiac contraindication as determined by at least one prescription for a triptan during the measurement year.</td>
<td></td>
</tr>
</tbody>
</table>

**Key Findings**

- 7.7% of the Migraine Population were identified as having a cardiac contraindication using a triptan.
- 37.2% of the Migraine Population had at least one triptan prescription filled during the measurement year (RX.2).
- 22.0% of the Migraine Population having at least one prescription for a triptan during the measurement year had a cardiac contraindication noted (RX.8).

**Discussion**

- Our data show that almost 8% of the Migraine Population had a cardiac contraindication as determined by at least one medical or pharmacy claim during the measurement year.
- Twenty-two percent of the Migraine Population identified as having a cardiac contraindication used a triptan during the measurement year. Highly varied rates of use between health plans is of particular interest.
- Our study demonstrates an unmet medical need for migraine patients who have cardiovascular disease/risk.

**The Migraine Quality Measurement Set**

- This examination of two measures included in the Migraine Quality Measurement Set demonstrates the potential value of the measures to identify pharmacy utilization trends.
- In addition to identifying a general concern about the widespread use of triptans in the at-risk population with cardiac contraindications, the pilot test demonstrates significant variation across health plans.
- The measures can be useful to health plans in identifying potential quality and safety issues and comparing their performance with national benchmarks.

**References**


**Acknowledgements**

- This study was funded by Merck Sharp & Dohme Corp.
- The authors also want to acknowledge the intellectual capital contributed by the following advisors:
  - Roger Caffi, MD
  - David Dodick, MD
  - Richard Lipton, MD, FAAN
  - Fred Freitag, DO
  - Walter "Buzz" Stewart, PhD