More Prevalent Comorbidities, Healthcare Costs, and Service Utilization in Male Myotonic Dystrophy (DM) Patients and Female Patients

John W. Day⁎, Kathryn A. Munoz⁎, Chao-Yin Chen⁎, Richard A. Brook⁎, Nathan L. Kleinman⁎, Hankyung Cho⁎, Brad McEvoy⁎, Mark Staill⁎, Li-Jung Tai⁎
⁎Stanford Neuroscience Health Center, ⁎Avivity Biosciences, Inc., ⁎Better Health Worldwide
⁎Former employee of Avidity Biosciences, Inc.

Objective
• Describe the management of male and female patients with myotonic dystrophy (DM) compared with matched controls (MCs).

Background
• DM types 1 and 2 are rare, dominantly inherited, multisystem diseases that present as progressive muscle weakness and myotonia, along with variable cardiopulmonary, gastrointestinal, and neurological manifestations.1
• Sex-specific data on patients with DM are limited
• There currently are no approved therapies for DM

Design/Methods
• We used PharMetrics de-identified US claims (Jan 2010—Mar 2021) to retrospectively evaluate care for DM and MC cohorts (Figure 1)
  - The DM cohort is identified as having ≥2 DM claims 230 days apart. DM claims were identified by International Classification of Disease Ninth Revision (ICD-9) code 359.21 or Tenth Revision (ICD-10) code G711; which do not differentiate between DM subtypes

Table 1: Descriptive Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Male DM (N=400)</th>
<th>Male MCs (N=1209)</th>
<th>Female DM (N=492)</th>
<th>Female MCs (N=1467)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age (SD)</td>
<td>39.9 (18.9)</td>
<td>39.2 (19.3)</td>
<td>42.0 (17.3)</td>
<td>41.8 (17.2)</td>
</tr>
<tr>
<td>CCI mean (SD)</td>
<td>1.9 (2.2)</td>
<td>0.93 (1.95)</td>
<td>1.77 (2.38)</td>
<td>0.92 (1.81)</td>
</tr>
<tr>
<td>Percent with CCI &gt;1</td>
<td>42.0%</td>
<td>17.9%</td>
<td>42.3%</td>
<td>18.7%</td>
</tr>
</tbody>
</table>

Table 2: Comorbidities

Comorbidities
• There were more comorbid condition-specific categories in males than in females (100 vs 93) where prevalence was significantly greater in DM vs MCs (Figure 2)
  - Comorbidities that were significantly different (DM vs MCs) and more prevalent in male DM patients included “other lower respiratory disease,” “cardiac dysrhythmias,” and “osteoporosis”
  - Similarly, “trachea of lower limit,” “acute myocardial infarction,” and “superficial injury; contusion” were comorbidities that were only significantly more prevalent in female patients with DM

Figure 3: Select® Comorbidities by Absolute Prevalence per Cohort

Conclusions
• Male and female patients with DM, in several categories, experience notable differences in comorbidities, healthcare costs, and service utilization compared with MCs
  - Osteoporosis was higher in males with DM versus MCs, and females with DM experienced several cardiac-related comorbidities in a higher prevalence than their MCs
  - This study demonstrates differences in the burden of disease between male and female patients with DM versus their respective MCs
  - Service utilization likely reflects multiplicity care in managing DM
  - The data reflect the multisystem disease burden and financial consequences on DM patients and their families and provide insight into management that may reduce morbidity and mortality

Since there are no approved therapies for DM, the increased service utilization likely reflects the manifestations of its management

References

Abbreviations
AHRQ, Agency for Healthcare Research and Quality; ATC, Anatomical Therapeutic Chemical; CCI, Charlson Comorbidity Index; DM, myotonic dystrophy; MC, matched controls; ICD-9, International Classification of Disease Ninth Revision; ICD-10, International Classification of Disease Tenth Revision; SD, standard deviation.