Achilles Tendonopathy and Ruptures – Analysis of a Large Private Insurance Database

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I and/or my co-authors have something to disclose.

Chris Sakowski MD - Arthrex, Inc: Employee (spouse)

Yermie Cohen BS - This individual reported nothing to disclose

Jeff Mulvihill MD - This individual reported nothing to disclose

George Hatch MD - This individual reported nothing to disclose

Jeff Wang MD

Purpose

• Are fluoroquinolones associated with rupture?
  – Levoquin / Moxi yes
  – Cipro no

• What is the age curve of an Achilles tendon rupture? 40–44 and 50-54 peak

• What preceding medical conditions that are risk factors? Achilles tendonopathy 15%
Materials and Methods

- PearlDiver Private Insurance Database
- Orthopaedic Injury Specific
- 20 Million Patients
- Chi square analysis was used to determine statistically significant differences between age, sex, and geographic regions
- Regression analysis was used to determine significance in yearly and quarterly difference
- Kaplan-Meier survival analyses were performed for the active 12-month follow-up groups

- Results – 22,009 ruptures
Geographic Distribution

Achilles tendon rupture incidence per 10,000 population
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Sex Distribution 2:1

Ruptures

Male
Female

Ruptures
Age Distribution

A. Total Cases by Age Group

B. Incidence by Age Group

- Rupture
- Tendonitis
- TTR

Age Group:
- 0-9
- 10-14
- 15-19
- 20-24
- 25-29
- 30-34
- 35-39
- 40-44
- 45-49
- 50-54
- 55-59
- 60-64
- 65-69
- 70-74
- 75-79

Number of Cases

Incidence

(Per 10k)

(Per 100)
Fluoroquinolone Survival

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### Odds Ratio per drug for entire cohort

<table>
<thead>
<tr>
<th>Drug</th>
<th>Odds Ratio</th>
<th>95% CI</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ciprofloxacin</td>
<td>0.9785</td>
<td>0.9172 to 1.044</td>
<td>0.5196</td>
</tr>
<tr>
<td>Moxifloxacin</td>
<td>1.672</td>
<td>1.465 to 1.907</td>
<td>&lt; 0.0001</td>
</tr>
<tr>
<td>Levaquin</td>
<td>1.514</td>
<td>1.410 to 1.624</td>
<td>&lt; 0.0001</td>
</tr>
</tbody>
</table>
15% With Patients With Dx Of Achilles Tendonopathy Ruptured The Achilles Tendon Within One Year After The Initial Diagnosis
Conclusions: Achilles Tendon Ruptures

- Most common in springtime
- Most common in the Northeast
- Broad age of occurrence and bimodal
- Fluoroquinolones are associated with rupture
- 15% With Patients with Dx Of Achilles tendonopathy ruptured the Achilles tendon within one year after the initial diagnosis

References