Quantifying the Delays to Rheumatologist Consultation and Treatment

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Disclosures

• None of the authors have any commercial relationships relevant to this study.
Previous studies quantifying delays to rheumatologists have studied patients from **urban rheumatology clinics** and thus include all patients who ultimately had access to rheumatologists.

Efforts on defining timeliness of rheumatology consultations have primarily focused on targeted sub-populations (e.g., RA), which fail to consider the totality of referrals where ‘inappropriate’ referrals can negatively impact timeliness of urgent rheumatology consultations.
Objectives

- To characterize first time referrals to rheumatologists, the early care management of patients with rheumatic diseases, and timeliness of care and treatment.
Study Design

• Retrospective observational study involving EMRs from primary care physicians
Data Source & Setting

- First-time rheumatology referrals from the primary care Electronic Medical Record Administrative data Linked Database (EMRALD)
- Comprehensive pooled EMR data from family physicians distributed throughout Ontario, Canada.
• Standardized data abstraction tool:
  – categorize each patient according to the principal diagnosis associated with the referral
  – capture dates to calculate wait-times along each component of the care pathway:

• Dates of symptom onset, presentation in primary care, and referral were identified from family physicians’ EMRs.
• Dates of rheumatologist consultations and treatment were obtained from consultation letters within the EMR and by linking with physician service claims (OHIP).
Analysis

• Descriptive analyses were used to characterize the study population overall and stratified according to diagnostic categories.

• The duration of each phase of the full patient care pathway (symptom onset to primary care to referral to rheumatologist consultation to treatment) was determined overall and by diagnostic categories.
Sample Characteristics

- 2430 patients with rheumatology referral letters
- 168 primary care physicians
  - 32 rural, 39 suburban, and 97 urban practices
- 146 rheumatologists
- 2417 (99.5%) referrals occurred between 2005-2013
  - corresponding to the average duration of EMR use.
**Population**

- **268,854**

**No. of Rheumatology Referrals (Patients Screened)**

- **2925**

**Study Sample: 2430**

**Patients Excluded: 495**
- Miscoded 204 (41%)
- Re-referral 133 (27%)
- Possible re-referrals 73 (15%)
- Second Opinion 5 (1%)
- Other 80 (16%)

**Osteoarthritis**
- 787 (32%)

**Systemic Rheumatic Diseases**
- 745 (31%)

**Regional MSK Syndromes**
- 395 (16%)

**Chronic Pain Conditions**
- 346 (14%)

**Osteoporosis**
- 45 (2%)

**Miscellaneous**
- 112 (5%)

**Rheumatoid Arthritis**
- 120 (16%)

**Inflammatory Arthritis**
- Other 167 (22%)

**Crystal arthropathy**
- 122 (16%)

**Spondylitis/SpA**
- 76 (10%)

**Psoriatic Arthritis**
- 44 (6%)

**PMR**
- 66 (9%)

**Vasculitis**
- 19 (3%)

**Other SARDs**
- 131 (18%)

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<table>
<thead>
<tr>
<th>Diagnostic Category</th>
<th>Age, Mean (SD)</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Patients</td>
<td>53 (16)</td>
<td>69%</td>
</tr>
<tr>
<td>Osteoarthritis</td>
<td>56 (16)</td>
<td>70%</td>
</tr>
<tr>
<td>Systemic Rheumatic Diseases</td>
<td>53 (17)</td>
<td>57%</td>
</tr>
<tr>
<td>RA</td>
<td>55 (16)</td>
<td>70%</td>
</tr>
<tr>
<td>IA – other</td>
<td>51 (16)</td>
<td>57%</td>
</tr>
<tr>
<td>Crystal</td>
<td>61 (15)</td>
<td>27%</td>
</tr>
<tr>
<td>Spondylitis</td>
<td>42 (15)</td>
<td>41%</td>
</tr>
<tr>
<td>Psoriatic Arthritis</td>
<td>53 (13)</td>
<td>59%</td>
</tr>
<tr>
<td>PMR</td>
<td>71 (9)</td>
<td>62%</td>
</tr>
<tr>
<td>Vasculitis</td>
<td>53 (24)</td>
<td>53%</td>
</tr>
<tr>
<td>Other SARDs</td>
<td>45 (14)</td>
<td>82%</td>
</tr>
<tr>
<td>Regional MSK Syndromes</td>
<td>52 (16)</td>
<td>72%</td>
</tr>
<tr>
<td>Chronic Pain Conditions</td>
<td>47 (14)</td>
<td>86%</td>
</tr>
<tr>
<td>Osteoporosis</td>
<td>62 (15)</td>
<td>84%</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>46 (16)</td>
<td>71%</td>
</tr>
</tbody>
</table>
Proportion of patients seen by rheumatologists from time of REFERRAL

Overall, 83% of patients were seen within 12 months.

Systemic Rheumatic Diseases were seen earlier.
Time from Referral to Rheumatologist Visit - 2

Proportion of patients seen by rheumatologists from time of REFERRAL

BENCHMARK (Target = 100%):
RA/IA: 4 weeks
PsA: 6 weeks
AS: 3 months
Proportion of patients seen by rheumatologists from **SYMPTOM ONSET**

**BACKGROUND**

**METHODS**

**RESULTS**

**DISCUSSION**

**CONCLUSION**

Time from Symptom Onset to Rheumatologist Visit

**Proportion of patients seen by rheumatologists from SYMPTOM ONSET**
## Timeliness of Care

<table>
<thead>
<tr>
<th>Diagnostic Category</th>
<th>Median (in days)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Time from symptom onset to first documentation in primary care</td>
</tr>
<tr>
<td>All Patients</td>
<td>251</td>
</tr>
<tr>
<td>Osteoarthritis</td>
<td>367</td>
</tr>
<tr>
<td>Systemic Rheumatic Diseases</td>
<td>136</td>
</tr>
<tr>
<td>RA</td>
<td>173</td>
</tr>
<tr>
<td>IA – other</td>
<td>102</td>
</tr>
<tr>
<td>Crystal</td>
<td>188</td>
</tr>
<tr>
<td>Spondylitis</td>
<td>716</td>
</tr>
<tr>
<td>Psoriatic Arthritis</td>
<td>228</td>
</tr>
<tr>
<td>PMR</td>
<td>63</td>
</tr>
<tr>
<td>Vasculitis</td>
<td>128</td>
</tr>
<tr>
<td>Other SARDs</td>
<td>208</td>
</tr>
<tr>
<td>Regional MSK Syndromes</td>
<td>155</td>
</tr>
<tr>
<td>Chronic Pain Conditions</td>
<td>360</td>
</tr>
<tr>
<td>Osteoporosis</td>
<td>--</td>
</tr>
<tr>
<td>Miscellaneous</td>
<td>--</td>
</tr>
</tbody>
</table>
### Treatment Patterns

<table>
<thead>
<tr>
<th>Diagnostic Category</th>
<th>Family Physician</th>
<th>Rheumatologist</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Any</td>
<td>NSAID/COXIB</td>
</tr>
<tr>
<td>All Patients</td>
<td>49%</td>
<td>38%</td>
</tr>
<tr>
<td>Systemic Rheumatic Diseases</td>
<td>61%</td>
<td>48%</td>
</tr>
<tr>
<td>RA</td>
<td>72%</td>
<td>53%</td>
</tr>
<tr>
<td>IA – other</td>
<td>63%</td>
<td>54%</td>
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<tr>
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<tr>
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<td>45%</td>
</tr>
<tr>
<td>Psoriatic Arthritis</td>
<td>64%</td>
<td>61%</td>
</tr>
<tr>
<td>PMR</td>
<td>79%</td>
<td>44%</td>
</tr>
<tr>
<td>Vasculitis</td>
<td>47%</td>
<td>-</td>
</tr>
<tr>
<td>Other SARDs</td>
<td>35%</td>
<td>24%</td>
</tr>
</tbody>
</table>
Proportion prescribed a DMARD from 1st Rheumatologist Visit

Proportion prescribed a DMARD from Symptom Onset

- Rheumatoid Arthritis
- Inflammatory Arthritis: other
- Psoriatic Arthritis
Delays Along the Care Pathway: Rheumatoid arthritis

• Total delay from symptom onset to DMARD: >400 days long
• Most of the delay occurs prior to referral
Strengths & Limitations

• Large representative sample

• Retrospective nature of the data
  – Reliant on accurate clinical documentation
    • symptom onset, diagnoses, treatment initiation
  – Misclassification between diagnostic categories
• Approximately 1 in 3 referrals to rheumatologists were for a systemic inflammatory rheumatic disease.
• Overall, 37% of ALL referrals resulted in pharmacologic treatment by rheumatologists (56% for patients with systemic rheumatic diseases).
Conclusions - 2

• Longer delays to see a rheumatologist than previous Canadian reports
  – Patients with systemic rheumatic diseases were seen earlier by rheumatologists than other types of referrals.
  – Substantial delays were observed in patients seeking care and family physicians referring, regardless of the patients’ diagnosis.
  – As most of the delay occurs prior to referral, only 36% of RA patients were prescribed a DMARD within 6 months of symptom onset

• Our findings will hopefully stimulate the development of new strategies to improve the timeliness and appropriateness of rheumatology referrals.
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