Telemedicine Impact on Rheumatoid Arthritis Care

Elizabeth D. Ferucci, MD, MPH
October 18, 2017
Alaska Native Health Research Conference
Background

• Rheumatoid arthritis (RA) is an autoimmune disease with a high prevalence in AI/AN populations.

• In RA, frequent visits to a rheumatologist improve disease outcomes.
Telemedicine Clinical Services Provided

Live Video Visits

Store and Forward Consults
Adoption of Live Telemedicine

# of Live Video Visits Provided by ANMC
Telemedicine Clinical Services Provided

- General Internal Medicine
- Hepatitis
- Dermatology
- Pediatric Neurology
- Adolescent Medicine
- Neurology
- Gastroenterology
- Oncology
- Physical Therapy
- Pulmonology
- Neurology
- OB/GYN
- Breast Cancer Screening
- Endocrinology
- HIV/Early Intervention Services
- Palliative Care
- Speech Language Pathology
- Diabetes
- Infectious Disease
- Rheumatology
- Cardiology
- Emergency Services
- ENT
- Primary Care
Purpose

• The purpose of this study is to evaluate the impact of telemedicine rheumatology follow-up on disease activity, access to care, and quality of care in RA.

• In addition, the study is examining views about telemedicine with a participant survey.
Methods

• Individuals with a diagnosis of RA seeing a rheumatologist for follow-up either in-person or by telemedicine were invited to participate in this study
• Surveys and medical record review completed at baseline
• Follow-up at 6 and 12 months is ongoing.
Data Collection

• Surveys
  – RAPID3 (a self-reported rheumatoid arthritis disease activity questionnaire)
  – Telemedicine acceptability and usability

• Medical record data
  – Demographics
  – Disease characteristics
  – Quality of care measures
Data Analysis

• Participants are categorized as being in the telemedicine group if they have had at least one telemedicine visit with a rheumatologist and in the in-person group otherwise.

• Comparison of the two groups is performed for all measures.
## Baseline Characteristics

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Telemedicine (n=38)</th>
<th>In-person only (n=59)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female, n (%)</td>
<td>31 (82%)</td>
<td>53 (88%)</td>
<td>0.24</td>
</tr>
<tr>
<td>Age, mean, years</td>
<td>50.9</td>
<td>52.7</td>
<td>0.52</td>
</tr>
<tr>
<td>RA duration, mean, years</td>
<td>8.6</td>
<td>11.0</td>
<td>0.27</td>
</tr>
<tr>
<td>Miles to ANMC, mean</td>
<td>169.3</td>
<td>151.4</td>
<td>0.72</td>
</tr>
<tr>
<td># of rheumatology visits in past year, mean</td>
<td><strong>3.1</strong></td>
<td><strong>2.2</strong></td>
<td><strong>0.002</strong></td>
</tr>
<tr>
<td>Current smoker, n (%)</td>
<td>19 (50%)</td>
<td>26 (44%)</td>
<td>0.24</td>
</tr>
<tr>
<td>Comorbidity index</td>
<td>0.74</td>
<td>0.90</td>
<td>0.51</td>
</tr>
</tbody>
</table>
### Disease Activity and Functional Status

<table>
<thead>
<tr>
<th></th>
<th>Telemedicine (n=38)</th>
<th>In-person only (n=59)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAPID3 score, baseline, mean</td>
<td>3.9</td>
<td>3.6</td>
<td>0.47</td>
</tr>
<tr>
<td>RAPID3 moderate or high, baseline, n (%)</td>
<td>32 (84.2%)</td>
<td>48 (81.4%)</td>
<td>0.93</td>
</tr>
<tr>
<td>Functional status score, baseline, mean</td>
<td>2.4</td>
<td>2.3</td>
<td>0.80</td>
</tr>
<tr>
<td>6 months n=18</td>
<td>6 months n-21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>RAPID3 score, 6 months, mean</td>
<td>4.1</td>
<td>3.3</td>
<td>0.09</td>
</tr>
<tr>
<td>RAPID3 moderate or high, 6 months, n (%)</td>
<td>16 (88.9%)</td>
<td>18 (85.7%)</td>
<td>0.10</td>
</tr>
<tr>
<td>Functional status score, 6 months, mean</td>
<td>3.1</td>
<td>2.4</td>
<td>0.29</td>
</tr>
</tbody>
</table>
Quality Measures

• Disease activity and functional status were documented in the medical record more commonly in the in-person group (p=0.011 and 0.018, respectively), but there was no difference in other quality measures.

• When controlling for age, sex, and physician seen, functional status was no longer significant.
Opinions on Telemedicine

- Acceptable way to receive health services
- Prefer to see specialist in-person
- My privacy and confidentiality is protected during video visits
- Important for the specialist to physically examine me
- Video visits are more convenient than traveling to see a specialist
- My culture and traditions are respected in a video visit.
- I can be involved in decisions about my health care in a video visit.
- I can talk openly and easily to my provider in a video visit.
- Care given in video visits is as good as in-person
- A doctor can get a good understanding of my medical problem using a video visit
- I can always trust the equipment to work
- Video visits help improve health.
Opinions: Telemedicine Users Only

- **My health is better than before I used telemedicine.**
  - Strongly Agree: 71%

- **The medical care I receive in video visits is as good as the care I would receive in-person.**
  - 71% positive

- **I could see and hear the specialist well during the telemedicine visit.**
Conclusion

• At baseline, participants seen by telemedicine for RA are similar to those seen in-person with respect to disease activity and quality of care.

• Participants ever seen by telemedicine have more frequent visits with a rheumatologist and more favorable opinions of telemedicine.