Physical activity levels in female rheumatoid arthritis patients on long term anti-TNF therapy compared to patients with active rheumatoid disease and healthy controls. [Abstract]

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Physical activity levels in female rheumatoid arthritis patients on long term anti-TNF therapy compared to patients with active rheumatoid disease and healthy controls.

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Abstract:
Background: Anti-TNF therapy has revolutionised the management of rheumatoid arthritis (RA) with rapid and sustained improvements in pain, function and quality of life. However, we do not know how this impacts upon habitual daily physical activity and whether treated patients attain activity levels seen in healthy controls. This study aimed to compare the physical activity levels of patients whose RA was well controlled on long-term anti-TNF therapy to RA patients with active arthritis and non-RA controls.

Methods: Participants were patients on anti-TNF for more than two years (tRA) with DAS<3.2; patients on conventional DMARDs with DAS>3.2 (aRA) and healthy controls (C), matched for age and BMI. Physical activity was assessed using the Actigraph GT3x+ accelerometer, worn throughout waking hours for seven days to determine time spent in light activity, moderate to vigorous physical activity (MVPA) and sedentary time. The International Physical Activity Questionnaire (IPAQ) was also completed. Groups were compared using analysis of variance with Bonferroni post hoc tests; Kruskal-Wallis or Mann-Whitney U-test as appropriate.

Results: RA disease duration was significantly greater in tRA than aRA. Groups did not differ significantly in age, height, weight or body mass index (Table). Daily step count was significantly lower in aRA than tRA and C. Sedentary time (as a proportion of wear time) was significantly greater in aRA than tRA, whilst the reverse was true for light activity time. MVPA time was significantly lower in both RA groups than in controls. IPAQ questionnaires demonstrated significant differences between groups, with substantially higher values in C than RA groups in total METs and MET-minutes per week in domestic and garden, leisure, walking activities as well as total moderate and vigorous activities. RA patients had lower moderate to vigorous activity time than controls, regardless of treatment. aRA had lower light activity time, and more sedentary time, than tRA

Conclusion: Moderate to vigorous physical activity should be promoted in all RA patients as even those with well controlled disease exhibit a deficit in comparison to controls.
Table: Characteristics of Anti-TNF (tRA), Active Rheumatoid Disease (aRA) and control (C) groups: Mean (SD) or Median (inter-quartile range)

<table>
<thead>
<tr>
<th></th>
<th>tRA (n=40)</th>
<th>aRA (n=32)</th>
<th>C (n=34)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (y)</td>
<td>59.0 ± 10.4</td>
<td>60.4 ± 10.6</td>
<td>60.8 ± 10.5</td>
<td>0.748</td>
</tr>
<tr>
<td>BMI (kgm⁻²)</td>
<td>25.7 ± 4.5</td>
<td>27.7 ± 5.6</td>
<td>25.1 ± 3.2</td>
<td>0.072</td>
</tr>
<tr>
<td>HAQ</td>
<td>0.7 ± 0.6 ⁹</td>
<td>1.2 ± 0.6 ⁹ c</td>
<td>0.1 ± 0.1 ⁹ c</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>DAS28</td>
<td>2.7 (0.9) ⁹</td>
<td>5.3 (1.2) ⁹</td>
<td></td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>RA disease duration (y)</td>
<td>15.8 ± 9.2 ⁹</td>
<td>9.6 ± 9.6 ⁹</td>
<td></td>
<td>0.006</td>
</tr>
</tbody>
</table>