Owning Pets Reduces the Perception of Disease Activity in Patients With Rheumatoid Arthritis

To the Editor:

Patients with rheumatoid arthritis (RA), a chronic inflammatory systemic disease, often experience a decreased quality of life and social isolation due to pain, fatigue, functional disability, and depressive symptoms. These conditions often extend beyond pharmacological treatment and therefore place emphasis on the importance of patient self-management strategies to deal with these negative effects throughout the disease course. Several modifiable lifestyle aspects can affect RA outcomes and the perception of disease burden. To date, only 1 recent study investigated the beneficial effects of owning a pet in patients with inflammatory arthritis (specifically RA, psoriatic arthritis, spondyloarthritis). This study showed that caring for a dog was associated with better quality of life as well as decreased pain perception and depressive symptoms.

Owning a companion animal has been associated with several health benefits that include physical and psychological aspects. Indeed, the owner-pet bond seems to reduce levels of psychological stress, depression, loneliness, and anxiety, possibly encouraging social interactions and increasing feelings of social support. Further, previous studies highlighted how having a pet, mainly a dog, might facilitate the adoption of a healthier lifestyle that is primarily characterized by higher levels of physical activity, thus decreasing cardiovascular risk factors.

The present study is a pilot observational case-control study that aimed to investigate whether owning a companion animal might influence lifestyle habits and the perception of disease activity in a cohort of patients with RA. This study included 100 adults (aged ≥ 18 years) with established RA: 50 patients who owned at least 1 companion animal (case group), and a sample of 50 patients with RA with no pets (control group) matched for age, sex, and disease duration (± 5 yrs). Patients with overlap syndromes were excluded. The local ethical committee approved the study (Comitato Etico Milano Area 2, 236_2023bis), and all participants gave written informed consent.

We collected and sociodemographic data, which are reported in the Table. Specifically, lifestyle habits were classified as sedentary or active according to the physical demands required to perform everyday tasks (e.g., sitting, standing, walking, lifting, carrying). RA activity was evaluated by using the Simplified Disease Activity Index (SDAI), which includes the patient global assessment (PtGA) assessed through a visual analog scale ranging from 0 (best disease control) to 10 (worst disease control). Moreover, patients indicated whether they possessed any companion animal and which type. Overall, 56% of patients owned at least 1 dog, 23% at least 1 cat, 10% owned both, and 10% owned other pets (tortoises, rabbits, and parrots).

In the univariate analysis, we found differences in the median PtGA (P = 0.003, Figure 1A) and difference in the median SDAI (P = 0.04) between the group of patients owning pets and the group of those who did not. Indeed, 34% of pet owners reached SDAI remission vs 24% of those without animals, even though this was not confirmed by bivariate analysis (P = 0.20).

A difference in the lifestyle of these 2 groups emerged, although this was not statistically significant (P = 0.06; Figure 1B). Particularly, pet owners seemed to have a more active lifestyle. Nevertheless, an active lifestyle was not associated with a lower PtGA (P = 0.28). No statistical difference was found in C-reactive protein (CRP) levels, rheumatoid factor (RF), and/or anti-citrullinated protein antibody (ACPA) positivity, smoking status, and BMI (data not shown). Additionally, we did not find any considerable difference in PtGA, SDAI, lifestyle habits, and CRP levels among those who possessed at least 1 dog compared to those who owned other animals.

In the regression analyses, we found an indirect association between PtGA and the presence of companion animals (β = −0.30 (95% CI −1.79 to −0.36), P = 0.004).

Nevertheless, some limitations should be addressed. First, this is a pilot study, and the sample and selection of patients might affect the generalization of our results. Second, self-reported information might not always be accurate. Third, we did not investigate levels of perceived loneliness and disability, which could affect general well-being.

In conclusion, our study showed that having companion animals significantly reduces the perception of disease activity in patients affected by RA, as reflected by lower PtGA in patients owning pets compared to those without any. Accordingly, the SDAI remission rate of the case group was higher. The presence of a pet seems to favor the adoption of a more active lifestyle,

Table. Characteristics of patients with RA with or without a pet.

<table>
<thead>
<tr>
<th>Demographics</th>
<th>Patients With RA</th>
<th>Patients Without Pets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, yrs</td>
<td>63.5 (51.3-69.8)</td>
<td>62.0 (47.7-69.3)</td>
</tr>
<tr>
<td>Female sex</td>
<td>41 (82)</td>
<td>41 (82)</td>
</tr>
<tr>
<td>BMI</td>
<td>24.2 (21.3-26.0)</td>
<td>24.2 (21.7-28.1)</td>
</tr>
<tr>
<td>Disease characteristics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disease duration, yrs</td>
<td>13.9 (6.3-17.8)</td>
<td>11.9 (7.9-18.8)</td>
</tr>
<tr>
<td>RF/ACPA+</td>
<td>35 (70)</td>
<td>33 (66)</td>
</tr>
<tr>
<td>PrGA</td>
<td>2.5 (2.0-3.0)</td>
<td>3.5 (2.5-5.0)</td>
</tr>
<tr>
<td>SDAI</td>
<td>5.8 (2.3-8.0)</td>
<td>8.4 (3.9-13.4)</td>
</tr>
<tr>
<td>SDAI remission</td>
<td>17 (34)</td>
<td>12 (24)</td>
</tr>
<tr>
<td>Lifestyle</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Active lifestyle</td>
<td>36 (72)</td>
<td>27 (54)</td>
</tr>
<tr>
<td>Smoker</td>
<td>23 (46)</td>
<td>20 (40)</td>
</tr>
</tbody>
</table>

Values are expressed as n (%) or median (IQR). ACPA: anti-citrullinated protein antibody; RA: rheumatoid arthritis; RF: rheumatoid factor; PtGA: patient global assessment; SDAI: Simplified Disease Activity Index.
even though this factor alone might not explain the reduction of observed PtGA scores. Further studies are needed to elucidate the role of companion animals in health outcomes in patients with RA.

These results are in line with the literature supporting PtGA as having several drivers other than disease activity. This undermines the appropriate evaluation of the remission state based on disease activity composite indexes, in which PtGA has a key role.

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REFERENCES

Figure 1. Perception of (A) disease activity and (B) lifestyle in patients with rheumatoid arthritis who own a pet compared to those who do not. PtGA: patient global assessment.