Table 1: Demographic data of the diagnostic categories

<table>
<thead>
<tr>
<th>Diagnosis (n = 344 patients)</th>
<th>RA</th>
<th>UA</th>
<th>OA</th>
<th>NIA</th>
<th>Other IA</th>
<th>ReA</th>
<th>CrA</th>
<th>Significance between groups, P-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cohort, n (%)</td>
<td>73</td>
<td>40</td>
<td>58</td>
<td>89</td>
<td>50</td>
<td>14</td>
<td>19</td>
<td></td>
</tr>
<tr>
<td>Female:male ratio</td>
<td>2:1</td>
<td>2:1</td>
<td>3:1</td>
<td>3:1</td>
<td>1:1</td>
<td>2:1</td>
<td>1:1</td>
<td>1.5:1</td>
</tr>
<tr>
<td>Age, median (years)</td>
<td>49</td>
<td>46</td>
<td>55</td>
<td>42</td>
<td>46</td>
<td>44</td>
<td>61</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Symptom duration, median (range), weeks</td>
<td>(18–88)</td>
<td>(18–87)</td>
<td>(47–78)</td>
<td>(16–73)</td>
<td>(18–72)</td>
<td>(20–84)</td>
<td>(24–79)</td>
<td>&lt;0.0001</td>
</tr>
<tr>
<td>Serum 25(OH)D, median (range), nmol/l</td>
<td>40</td>
<td>40.5</td>
<td>44</td>
<td>37</td>
<td>34</td>
<td>40</td>
<td>44</td>
<td>0.118</td>
</tr>
</tbody>
</table>

Diagnostic categories include: UA: undifferentiated arthritis; NIA: non-inflammatory arthralgia including diagnoses such as FM or mechanical pain; Other IA: other inflammatory arthralgia including diagnoses such as PsA; ReA: reactive arthritis such as parvovirus and CrA: crystal arthropathy. For each diagnostic category, patient demographics are displayed as well as median disease duration and median serum 25(OH)D levels. We demonstrate that there was no difference in baseline serum 25(OH)D levels between the diagnostic categories. However, there were statistically significant differences in age, sex and symptom duration as shown. Statistical analysis included Kruskal-Wallis test for continuous data and $\chi^2$ test for nominal data.

complete data on all concomitant baseline therapy between 2007 and 2009, but data from a larger contemporary cohort (2012–2014, n = 761) from the same clinic demonstrated that the prevalence of vitamin D supplementation was low (7%) and was similar between early OA (8%) and early RA (8%) groups. Therefore, baseline vitamin supplementation was unlikely to be confounding this study. Larger studies are required to validate our findings, but since any immunomodulatory effect of vitamin D on disease activity would be anticipated in early as well as in established RA, the potentially spurious nature of the previously reported relationship should be considered.

Rheumatology key message

- In contrast to established RA, vitamin D does not affect DAS28 in early RA.

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References


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Increase in admissions related to giant cell arteritis and polymyalgia rheumatica in the UK, 2002–13, without a decrease in associated sight loss: potential implications for service provision

Sir, Among the many potential complications of GCA, one of the areas of greatest concern is the threat of permanent blindness. We have conducted a study of the Hospital
Episode Statistics (HES) data set to determine the magnitude of GCA-related hospital in-patient admissions and to estimate the rate of recorded visual loss in those investigated for GCA within National Health Service England between 1 January 2002 and 31 December 2013. The Health and Social Care Information Centre (Leeds, UK) granted University Hospital Birmingham a data reuse agreement for Hospital Episode Statistics research. Ethics approval for the project was obtained from the Quality and Outcomes Research Unit at University Hospital Birmingham. No patient consent was required for this study.

The results indicate that the rate of inpatient hospital admissions for the investigation of GCA and PMR have increased over the past decade (Fig. 1). There is a large difference in total numbers between PMR and GCA (Fig. 1A), which reflects the fact that the majority of patients with PMR do not require inpatient admission. There are a number of factors that could explain the increase, such as a change in identification and management of these patients, with more patients being referred from primary care, an increase attributed to improved hospital coding or an increasingly aged population. However, the increase is linear (Fig. 1B) and does not favour any particular year. It is possible there could actually be an underestimation, as more recently an increasing number of hospitals treat GCA on an outpatient basis (and the presumed diagnosis is therefore likely not to be captured by the HES). The most compelling data to support the hypothesis that GCA incidence is increasing over time is shown in Fig. 1C—the number of cases of visual loss attributed to GCA has more than tripled over a decade, an increase that cannot be explained only by changes in the average age of the population or case ascertainment.

Smeeth et al. [1] estimated in the previous decade (1990–2001) that the incidence of new cases of GCA was 2.2/10,000 person-years in England, with 3928 people with a first diagnosis during the total observation period. There are no further data on the incidence of GCA

Fig. 1  Increase in admissions for investigation of GCA and PMR and the documented visual loss during the study period

(A) The line graph shows the actual numbers and increase over time for both PMR- and GCA-related hospital inpatient admissions between 1 January 2002 and 31 December 2013 in England. (B) The logged value graph demonstrates that there is a linear increase in PMR- and GCA-related admissions and there is no significant difference between the two disease groups. (C) The increase in numbers coded with any type of visual loss over time in both the PMR and GCA groups between 1 January 2002 and 31 December 2013 in England. (D) The logged value graph demonstrates that there is no significant difference between the rate of increase in visual loss for GCA patients compared with PMR patients ($P = 0.234$).
in the UK. In 2011 the total number of HES GCA-related admission records was 7864 and in England the 2011 UK National Census counted 18,229,893 persons over the age of 50 years. The calculated estimated incidence of GCA-related hospital admissions in 2011 was 4.31/10,000 persons. Although this figure is nearly double what was seen in the last decade, there are inherent limitations in using HES data, which include the number of completed inpatient admissions for the investigation of GCA rather than an actual diagnosis of GCA. This is particularly important in GCA, as a large number of patients are investigated for GCA who are subsequently found not to have the disease. In addition, the figures presented here do not indicate patients who may have a dual diagnosis of PMR and GCA. However, the data show the scale of GCA-related episodes and the need for service provision to address this continuing year-upon-year increase in both diseases.

Further interrogation of the HES data allows us to look at trends in visual loss related to GCA: the diagnosis data have been cross-referenced with H codes that only code for visual loss (Fig. 1C). The H codes include both unilateral and bilateral visual loss. The PMR data were included here as a reference to illustrate the likely background numbers of visual loss within the population. The mean proportion of patients with any type of visual loss coded for GCA over the decade is 2.94% (S.D. 0.6, range 2.20–3.90). This is unexpected and different from the reported literature, where, although studies vary, there is general agreement that ~10–20% of cases will have permanent visual loss [2, 3]. The HES-generated figure is likely to be an underestimation considering the large numbers of patients investigated for GCA who subsequently do not have the disease; but even taking this into consideration it predicts a much lower figure than the literature. Fig. 1D shows that the increase in visual loss in both groups is not statistically different between PMR and GCA (general linear model, $P = 0.234$). The fact that one group’s total is not increasing above the other means that there is unlikely to be additional external factors influencing visual loss; this could be interpreted as reassuring. However, the coded visual morbidity associated in both groups is not decreasing, and this is concerning because it implies that our current awareness and management of GCA is inadequate, as we are not preventing visual loss. This warrants further investigation.

This analysis of the HES data gives us direct evidence of the increasing workload related to GCA within England. The data provide the evidence for a systematic national survey to establish reliable data for the burden of blindness, including both bilateral and unilateral severe sight loss secondary to GCA. This would provide valuable data that could help target the delivery of integrated diagnostic and treatment pathways to the group of patients at greatest risk and provide better national prevalence data for rheumatology and ophthalmology to enable better planning for capacity.

### Rheumatology key message
- Reliable data for the burden of blindness in GCA are needed.

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### References