Background: Polymyalgia rheumatica is a rather mild rheumatologic disease compared to rheumatoid arthritis. However, it affects only elderly, and steroid side effects are feared in this population. Several trials have tried to assess the efficacy of steroid-sparing agents on the course of the disease and on the reduction of cumulative dose of steroids. However, incidence of steroid-related side effects has never been measured in a prospective cohort study, and compared to the incidence of same events in age- and sex-matched, healthy controls.

Objectives: Our goal was to assess, in a prospective, double cohort study, the incidence of infections leading to hospitalization, and the mortality rate related to infections in PMR patients as compared to age- and sex-matched, population based, randomly selected controls.

Methods: One hundred and eighty five patients (114 females, mean age 74.7±8.2 years, 71 men, mean age 73.2±7.5 years), with pure, isolated PMR (without GCA sign or symptom) were included during the 1991-2007 period at the time of diagnosis. All patients fulfilled Hunder criteria. During the same period, 695 controls were included at the time of diagnosis of the cases. Cases and controls were prospectively followed-up every six months with a pre-formatted questionnaire over a maximal five-year period. Relative risks for infections were computed across strata, and a Mantel-Haenszel chi-square test was performed. A Log-rank test was performed for survival analysis.

Results: Six-month rates of infection related hospitalizations (% of patients of the cohort hospitalized for infection) are summarized in the table below:

<table>
<thead>
<tr>
<th>Months</th>
<th>6</th>
<th>12</th>
<th>18</th>
<th>24</th>
<th>30</th>
<th>36</th>
<th>42</th>
<th>48</th>
<th>60</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cases</td>
<td>4.19</td>
<td>1.3</td>
<td>3.42</td>
<td>2.21</td>
<td>3.17</td>
<td>2.7</td>
<td>1.8</td>
<td>3.06</td>
<td>3.45</td>
</tr>
<tr>
<td>Controls</td>
<td>1.44</td>
<td>2.7</td>
<td>2.45</td>
<td>3.24</td>
<td>2.63</td>
<td>3.1</td>
<td>2.48</td>
<td>2.36</td>
<td>3.73</td>
</tr>
<tr>
<td>RR</td>
<td>1.41</td>
<td>0.89</td>
<td>1.08</td>
<td>0.94</td>
<td>1.04</td>
<td>0.98</td>
<td>0.95</td>
<td>1.05</td>
<td>0.99</td>
</tr>
<tr>
<td>p value</td>
<td>0.05</td>
<td>0.39</td>
<td>0.56</td>
<td>0.78</td>
<td>0.76</td>
<td>1</td>
<td>1</td>
<td>0.72</td>
<td>1</td>
</tr>
</tbody>
</table>

Conclusion: Fears of infectious complications related to steroid treatment in PMR in the elderly are more theoretical than evidence-based, and probably over-estimated in the physician’s mind when beginning steroid treatment. Recent steroid sparing agents tested, such as anti-TNF, are known to significantly increase infections rates and tuberculosis incidence: their side-effects, versus steroids alone side-effects, should be considered before implementing new randomized controlled trials in PMR.

Conclusion: Fears of infectious complications related to steroid treatment in PMR in the elderly are more theoretical than evidence-based, and probably over-estimated in the physician’s mind when beginning steroid treatment. Recent steroid sparing agents tested, such as anti-TNF, are known to significantly increase infections rates and tuberculosis incidence: their side-effects, versus steroids alone side-effects, should be considered before implementing new randomized controlled trials in PMR.
**Background:** Direct life-threatening complications of GCA are considered to be rare. Iatrogenic side effects of steroids are feared in the elderly, but there are very few data available.

**Objectives:** Our goal was to assess, in a prospective, double cohort study, the incidence of infections leading to hospitalization, and the mortality rate related to infections in GCA patients as compared to age- and sex-matched, population based, randomly selected controls.

**Methods:** Five hundred and thirty five patients (388 females, mean age 74.7±8.2 years; 147 men, mean age 73.2±7.5 years), among whom 386 biopsy proven GCA, 149 biopsy negative GCA were included during the 1991-2007 period at the time of diagnosis. Pure, isolated polymyalgia rheumatica (PMR) were excluded from this analysis. All patients fulfilled the ACR criteria. During the same period, 724 controls were included at the time of diagnosis of the cases. Cases and controls were prospectively followed-up every six months with a pre-formatted questionnaire over a maximal five-year period. Relative risks for infections were computed across strata, and a Mantel-Haenszel chi-square test was performed. A Log-rank test was performed for survival analysis.

**Results:** Six-month rates of infection related hospitalizations (% of patients of the cohort hospitalized for infection) are summarized in the table below:

RR for severe infections were significantly increased during the 18 first months, with a significant gradient for the three first 6-months periods (Mantel-Haenszel chi-square test: RR = 1.49, 95% CI: 1.3-1.7; p=0.000002). Infections rates were afterward similar in cases and in controls.

Increased infection-related mortality was observed in cases compared with controls (log-rank test: \( p = 0.0045 \)), whereas overall mortality was similar in cases and controls (\( p = 0.4 \)). Septic shock accounted for 13.6% of all causes of deaths among cases versus 4.8% in controls, infectious colitis for 1.7% versus 0, pneumonia for 1% versus 0%, and tuberculosis for 1.13% only versus 0.

**Conclusion:** Incidence of severe infections, and infections related death rates are increased in GCA during the first 18 months after diagnosis, whereas overall mortality is similar in cases and controls. These rates are to be considered before adjoining immuno-suppressive drugs susceptible to still increase this risk without clear effect on steroid sparing.

**Dr Calabrese commentary:**
These studies indicate that careful consideration must be given when administering combination immunosuppressive drugs that may further increase infection risk without obvious benefit. Most of the risk of infection is finite and the patient can be watched for an indications of infection.