Elevation of D8/17-positive B lymphocytes in only a minority of Dutch patients with post-streptococcal reactive arthritis (PSRA): A pilot study [8]

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Elevation of D8\textsuperscript{17}-positive B lymphocytes in only a minority of Dutch patients with post-streptococcal reactive arthritis (PSRA): a pilot study

Sir. The last decennium has witnessed a resurgence of reactive arthritis secondary to infection with \(\beta\)-haemolytic group A streptococci (GAS) [1]. Nowadays, post-streptococcal reactive arthritis (PSRA) is recognized as a clinical syndrome distinct from the classic acute rheumatic fever (ARF) [2–5]. The major differences between ARF and PSRA are the predominant age of occurrence and the relative risk of developing carditis. Genetic studies reveal differences in the association of HLA DRB1*01 and HLA DRB1*16 with ARF vs PSRA.\(^6\) These HLA alleles may represent an individual’s genetic susceptibility factor for developing a humoral hyper-responsiveness secondary to GAS: the elevated D8\textsuperscript{17} binding to B lymphocytes in vitro occurs with a high frequency (63–100%) in ARF and has therefore been proposed as a susceptibility marker for ARF [7–10]. Here we report preliminary data on the binding of monoclonal antibody (mAb) D8\textsuperscript{17} to B lymphocytes in a series of Dutch PSRA patients.

We performed a systematic prospective observational study of eight consecutive patients at a Dutch out-patient department of rheumatology who presented with arthritis after streptococcal pharyngitis in the Dutch region of Friesland between May 1998 and May 1999. In all patients, antistreptolysine-O (ASO) and antideoxyribonuclease B (antiDNase B) titres were measured simultaneously and monitored sequentially at presentation and 6 weeks and 3 and 6 months after the primary throat infection. A significant rise and fall of ASO and/or antiDNase B titres was required prior to inclusion, as described previously [5]. Patients were included only if PSRA was diagnosed according to accepted criteria [1–5].

All PSRA patients were assessed for B-cell expression of D8\textsuperscript{17}, except one whose blood sample was lost. Blood was collected in acid citrate dextran tubes (ACD solution B tubes; Terumo Europe, Leuven, Belgium) and the whole-blood staining procedure was done the same day. Fluorescence-activated cell sorting (FACS) was performed within 24 h. Staining was done by incubating whole blood. After incubation for 1 h at 4°C, the suspension was washed with 2 ml phosphate-buffered saline (PBS) with 0.5% bovine serum albumin (Sigma Aldrich, Zwijndrecht, The Netherlands) and 5 \(\mu\)l antiDNase B (antiDNase B) titres was required prior to inclusion, as described previously [5]. Patients were included only if PSRA was diagnosed according to accepted criteria [1–5].
Letters to the Editor

Table 1. Demographic and laboratory data of seven PSRA patients

<table>
<thead>
<tr>
<th>Patient</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>Group data: mean (s.d.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (yr)</td>
<td>54</td>
<td>18</td>
<td>32</td>
<td>32</td>
<td>31</td>
<td>19</td>
<td>37</td>
<td>32 (12)</td>
</tr>
<tr>
<td>Sex</td>
<td>F</td>
<td>F</td>
<td>F</td>
<td>M</td>
<td>F</td>
<td>F</td>
<td>F</td>
<td>F/M = 6/1</td>
</tr>
<tr>
<td>Previous ARF</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Throat culture</td>
<td>GAS</td>
<td>GAS, H. infl.</td>
<td>Neg</td>
<td>Neg</td>
<td>Neg</td>
<td>GAS</td>
<td>Neg</td>
<td>3/7 GAS</td>
</tr>
<tr>
<td>No. of arthritic joints</td>
<td>19</td>
<td>6</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>10</td>
<td>14</td>
<td>8 (7)</td>
</tr>
<tr>
<td>Fever</td>
<td>+</td>
<td>-</td>
<td>-</td>
<td>+</td>
<td>+</td>
<td>-</td>
<td>+</td>
<td>+/− = 4/3</td>
</tr>
<tr>
<td>ESR (mm/h)</td>
<td>73</td>
<td>13</td>
<td>22</td>
<td>84</td>
<td>59</td>
<td>90</td>
<td>69</td>
<td>59 (30)</td>
</tr>
<tr>
<td>CRP (mg/l)</td>
<td>44</td>
<td>3</td>
<td>9</td>
<td>96</td>
<td>40</td>
<td>69</td>
<td>68</td>
<td>47 (34)</td>
</tr>
<tr>
<td>D8/17</td>
<td>2.1</td>
<td>3.2</td>
<td>4.1</td>
<td>4.4</td>
<td>6.9</td>
<td>8.0</td>
<td>9.6</td>
<td>5.5 (2.7%)</td>
</tr>
<tr>
<td>ASO (U/l)</td>
<td>1200</td>
<td>340</td>
<td>1200</td>
<td>1200</td>
<td>300</td>
<td>2400</td>
<td>300</td>
<td>990 (760)</td>
</tr>
<tr>
<td>AntiDNase B (U/l)</td>
<td>2500</td>
<td>240</td>
<td>1600</td>
<td>500</td>
<td>400</td>
<td>6400</td>
<td>2000</td>
<td>1950 (2150)</td>
</tr>
<tr>
<td>ASO/antiDNase B ratio</td>
<td>0.48</td>
<td>1.42</td>
<td>0.75</td>
<td>2.40</td>
<td>0.75</td>
<td>0.38</td>
<td>0.15</td>
<td>0.90 (0.77)</td>
</tr>
<tr>
<td>Recovery (months)</td>
<td>6</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>4</td>
<td>2</td>
<td>5</td>
<td>3.7 (1.5)</td>
</tr>
</tbody>
</table>

Extra-articular phenomena: *cholestatic hepatitis; **transient nodal escape, minor aorta valve insufficiency and uveitis; ***corticosteroid (topical)-responsive iritis and episcleritis.

M, male; F, female; Neg, negative; H. infl., Haemophilus influenzae.

cholestatic hepatitis was found in one and uveitis in two patients. Prophylaxis by monthly treatment with penicillin was advised for all patients in whom a primary GAS infection was suspected. All patients showed full recovery within a 1-yr follow-up period, which was uneventful. The binding of mAb D8/17 to B lymphocytes was assessed. The percentage of D8/17-positive B lymphocytes in PSRA patients ranged from 2.1 to 9.6% with a mean (s.d.) 5.5 (2.7%). A control group of 22 unselected (eight females, 14 males) healthy volunteers was used to determine the normal expression of D8/17 to B lymphocytes in PSRA patients. The fact that five of seven (71%) of our patients had a normal percentage of D8/17-positive B lymphocytes, which is in contrast with the 63–100% in the ARF literature.

We conclude that arthritis secondary to streptococcal infection in our region of The Netherlands is not accompanied by cardiac or neuropsychiatric involvement. Only 29% of PSRA patients had an elevated percentage of D8/17-positive B lymphocytes, which is in contrast with the 63–100% in the ARF literature. The fact that five of seven (71%) of our patients had a normal percentage of D8/17-positive B lymphocytes may suggest non-susceptibility to developing ARF in the majority of Dutch PSRA patients. Further prospective multicentre studies are warranted to confirm these findings in larger patient populations.

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Familial articular hypermobility and scaphotrapezial/trapezoid osteoarthritis in two siblings

Sir, We report two siblings with familiar articular hypermobility (FAH) and lone osteoarthritis (OA),