fluid by phenol/chloroform extraction. DNA was obtained from synovial fluid cells by homogenisation in TRI reagent (Molecular Research Centre, Cincinnati, Ohio, USA). DNA extracts were stored at -80°C. DNA extracts were tested for B19 DNA by a nested PCR assay. DNA extracts from positive (viraemic) and negative control sera were included in each run. The C reaction was above 10 mlg/ml in all but four rheumatoid arthritis patients, providing evidence of rheumatoid disease activity (table). In serum, 14 of 18 rheumatoid arthritis patients (77%) and eight of 11 RA patients (73%) were positive for anti-B19 IgG (table). In synovial fluid, nine of 18 rheumatoid arthritis patients (50%) and seven of 11 non-RA patients (64%) were positive for anti-B19 IgG (table). Serum and synovial fluid from all patients from both groups were anti-B19 IgM negative. Serum, synovial fluid, and synovial fluid cells from all patients tested negative for serum B19 DNA.


Due to these results, the study aimed to examine the association between Down syndrome and the development of gout in patients with coexistent gout. The study included six patients with Down syndrome and gout, and the following data were collected: age, sex, body mass index, serum urate concentrations, and presence of gouty arthritis.

The earlier study of Down syndrome patients described in this report covered 23 cases (15 patients, 8 non-matched male controls). The age of the study samples was 23.0 years (SD 6.4) for Down syndrome patients and 21.6 years (SD 4.9) for the control male gout patients. In the five patients described in the published reports, the age of onset of arthritis was 21.6 years (SD 4.9) in the Down syndrome patients with coexistent gout was also younger than general gouty patients. The earlier onset of gouty arthritis

in the Down syndrome patients may be attributed to the shorter life span of Down patients compared to the general population. Thus individuals with Down syndrome who would have developed gouty arthritis at an older age may not have lived long enough to develop the disease, thereby reducing the average onset age of gouty arthritis in this group of individuals.

Formerly the average life span of patients with Down syndrome was very short. Recently, however, the life expectancy of Down patients has been dramatically improved. The fact that our institute alone has recently encountered six cases of Down syndrome with gout, despite there being only four previous reports on five such patients, may indicate an increase in the frequency of gout in Down syndrome. If so, the numbers of such patients will increase in the near future in developed countries, where life expectancy of Down syndrome patients continues to improve.

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Cases with coexistent Down syndrome and gout

<table>
<thead>
<tr>
<th>Patients</th>
<th>Sex</th>
<th>Onset age (year)</th>
<th>Serum urate (mg dl⁻¹)</th>
<th>Hb (g dl⁻¹)</th>
<th>LDH (U litre⁻¹)</th>
<th>Ccr (ml min⁻¹)</th>
<th>Cua (ml min⁻¹)</th>
<th>Cua/Ccr (%)</th>
<th>Cua/Cer (%)</th>
<th>24 h ura (mg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case 1 M</td>
<td>18</td>
<td>12.4</td>
<td>16.3</td>
<td>255</td>
<td>69</td>
<td>2.4</td>
<td>3.48</td>
<td>320</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Case 2 M</td>
<td>22</td>
<td>10.3</td>
<td>17.3</td>
<td>271</td>
<td>97</td>
<td>3.2</td>
<td>3.30</td>
<td>440</td>
<td></td>
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</tr>
<tr>
<td>Case 3 M</td>
<td>15</td>
<td>11.7</td>
<td>21.5</td>
<td>304</td>
<td>48</td>
<td>2.3</td>
<td>4.79</td>
<td>230</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Case 4 M</td>
<td>30</td>
<td>10.3</td>
<td>13.6</td>
<td>187</td>
<td>51</td>
<td>1.9</td>
<td>3.73</td>
<td>360</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Case 5 M</td>
<td>31</td>
<td>11.5</td>
<td>14.8</td>
<td>232</td>
<td>51</td>
<td>1.9</td>
<td>3.73</td>
<td>360</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Case 6 M</td>
<td>22</td>
<td>9.1</td>
<td>14.7</td>
<td>260</td>
<td>51</td>
<td>1.9</td>
<td>3.73</td>
<td>360</td>
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<tr>
<td>Mean</td>
<td></td>
<td>23.0</td>
<td>10.88</td>
<td>251</td>
<td>71.3</td>
<td>2.63</td>
<td>3.86</td>
<td>325</td>
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</tr>
</tbody>
</table>

Ccr, creatinine clearance; Cua, urate clearance; Cua/Ccr, fractional urate clearance; 24 h ura, excretion of uric acid in 24 hours.

Down syndrome with coexistent gout: report of six patients and possible reasons for the scarcity of descriptions of this association.

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