Incidence and prevalence of psoriatic arthritis, ankylosing spondylitis, and reactive arthritis in the first descriptive population-based study in the Czech Republic

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Objective: To estimate the annual incidence and prevalence of psoriatic arthritis (PsA), ankylosing spondylitis (AS), and reactive arthritis (ReA) in a sample of the Czech population.

Methods: The population-based study was conducted in two regions of the Czech Republic (with a total population of 186000 inhabitants) in 2002–2003. Incident cases were registered on condition of confirming a definite diagnosis according to existing classification criteria during the study period (1 March 2002 to 1 March 2003). Prevalence was studied on the basis of identification of established diagnoses (before 1 March 2002) from registers of living patients of participating rheumatologists and other specialists. The age-standardized estimates of incidence and prevalence were calculated using the European standard population.

Results: The total annual incidence of PsA in adults aged ≥16 years was 3.6/100000 [95% confidence interval (CI) 1.4–7.6/100000] and the prevalence of PsA was 49.1/100000 (95% CI 39.5–60.4/100000). The annual incidence of AS in adults was 6.4/100000 (95% CI 3.3–11.3/100000) and the prevalence of AS was 94.2/100000 (95% CI 80.8-109.2/100 000). The annual incidence of ReA in adults was 9.3/100000 (95% CI 5.5–14.8/100000) and the prevalence of ReA was 91.3/100000 (95% CI 78.1–106.2/100000).

Conclusion: The annual incidence and prevalence rates of PsA, AS, and ReA in the first population-based survey in the Czech Republic compared well with data reported from other countries.

Knowledge of the frequency of rheumatological diseases in a defined population represents the foundation stone for the planning of rheumatology health care worldwide. In the current study we investigated three such diseases, psoriatic arthritis (PsA), ankylosing spondylitis (AS), and reactive arthritis (ReA), all belonging to the spondyloarthropathies.

PsA is a unique inflammatory arthritis associated with psoriasis. The variation in reported incidence [3–8 per 100000 (1–6) and prevalence (20–250 per 100000 (7–11)] based on hospital settings or population-based studies reported in European and US populations may be due to the different sampling methods, populations studied, lack of widely accepted classification and diagnostic criteria, or to the many patterns of the disease and the failure to make a correct diagnosis (12–14). The most recent study suggests an increasing incidence of PsA over time (2), although another study does not confirm this finding (1); the point prevalence rate in these studies was 100–158/100000 (1, 2, 10, 11).

AS is a chronic inflammatory disease affecting mainly the spine and the sacroiliac joints, although peripheral joint manifestation is not uncommon. The incidence of AS was reported to be 6.4–7.3/100000 in northern Europe and in white Caucasians of the USA (6, 15, 16) and 0.5–1.5/100000 in Japan and Greece (17, 18). The prevalence of AS was estimated to be 110–860/100000 in central Europe (19–24) and 29.5/100000 in Greece (17).

ReA refers to an infection-induced systemic illness and is characterized by aseptic inflammatory joint involvement occurring in genetically predisposed patients with a bacterial infection localized in a distant organ/system. It is not limited to the joints, and is often associated with eye and/or skin disease, enthesitis, dactylitis, and a variety of urogenital problems (25, 26). The occurrence of ReA is related to the frequency of the human leucocyte antigen HLA-B27. The incidence and prevalence are reported to be 10–28/100000 (5, 6, 27) and approximately 100/100000 (22, 28), respectively.

There have been no epidemiological data on rheumatic diseases in the Czech Republic since 1966. As part of...
the National Register of Rheumatic Diseases (29), a population-based study was set up to evaluate the incidence and prevalence of rheumatic diseases in two regions of the Czech Republic. The aim of our analysis was to evaluate the incidence and prevalence of PsA, AS, and ReA from March 2002 to March 2003, and to ascertain the time between symptom onset and establishment of diagnosis in these diseases.

Methods

Government-regulated health care in the Czech Republic is accessible to the entire population. There are state hospitals and private practices in all of the 70 districts in the 14 administrative regions of the country. Patients with specific symptoms are referred by general practitioners (GPs) to a specialist or, for those with more severe illness, to hospitals within the districts. Patients can seek specialist care even without a GP’s recommendation. GPs initially treat patients with early inflammatory joint diseases. The cases of early arthritis, acute or subacute polyarthritis are then referred to rheumatologists to confirm the diagnosis and to consider the appropriate therapy. Patients with ongoing inflammatory joint symptoms and/or confirmed diagnosis of inflammatory joint disease stay in rheumatological care. If the assessment of the definite diagnosis is more complicated or special laboratory investigations are needed, the patients are referred to the Institute of Rheumatology in Prague.

Two regions of the Czech Republic were selected for the study: the city of Ceske Budejovice (population of 97339 individuals) and the district of Cheb (88738 individuals). Eighty-three percent of the study population (154374 individuals) were aged ≥ 16 years. Data from Census 2001 were used as the basic population denominator. The population in both regions is mostly Caucasian and relatively stable. They represent an urban (Ceske Budejovice) and a rural (Cheb) population of the country.

Ceske Budejovice is the administrative centre of the southern Bohemia region. It has one central hospital serving all the patients of the region. All of the seven rheumatologists in the city participated in the study. Two rheumatologists worked in the central hospital at the rheumatology department, one at the paediatric department of the hospital, and four as private specialists. In addition, there are four private dermatologists and a specialized dermatology hospital unit in the city. All of the dermatologists participated in the study. In the Cheb district, there are two private rheumatologists and both of them participated in the study. They cover all the specialist care in the district because, although there are three local hospitals in the district, they do not have specialist rheumatology units. There are also two private dermatologists but no specialized dermatology hospital unit in the district. There were 37 GPs in Ceske Budejovice and 27 in Cheb at the time of the study. Seven GPs did not agree to participate (two in Ceske Budejovice and five in Cheb).

Incidence estimates

The patients with suspect symptoms were referred by their GPs, paediatricians, orthopaedists, internists, dermatologists, and relevant hospital departments (orthopaedics, internal medicine, surgery, paediatrics, dermatology, rehabilitation) to the rheumatologists in both districts. The referred patients were registered as incident cases if their diagnosis was confirmed according to the classification criteria during the study period (1 March 2002 to 1 March 2003). Patients were only registered if they had a permanent address in one of the study regions (the same criteria were used for the prevalence estimates). Only rheumatologists were allowed to confirm the diagnosis and to register patients with AS, PsA, or ReA. Patients were then asked to specify the year and month of the onset of symptoms, and to provide questionnaire-based personal and case-history data (e.g. name, sex, residence, date of birth, education, employment, affiliated rheumatological and non-rheumatological diseases, severity of the disease). There was also space on the questionnaire for the patients to add information that they considered important. All patients were asked to give their signed informed consent. Those who did not agree to participate were registered as anonymous (only age, sex, or other information given freely about their disease was recorded without collection of personal data). Patients not fulfilling the given criteria or those fulfilling more than one set of criteria (unsolved differential diagnosis) in the study year were not registered and were not further investigated.

All investigated incident patients had radiographs of the hands and feet to estimate the type and grade of morphological changes of the affected joints according to normal practice. All registered incident patients had pelvic plain radiographs and in doubtful cases of potential sacroiliitis, computer tomography (CT) scans of sacroiliac joints were conducted according to classification criteria and recommendation published elsewhere (30). A definite diagnosis of sacroiliitis was given on the agreement of a specialist in radiology and a rheumatologist, again according to normal practice.

All GPs, paediatricians, specialists, and doctors working in previously specified hospital units were informed about the study before it started; they were invited to a seminar and were given written information about the study. The participating rheumatologists were given instructions to use unified classification criteria and to fill in the form for each potential case. One of the investigators spent 6 months in each region to give methodological advice and help when requested.

All of the patients defined as having PsA fulfilled the Vasey and Espinoza criteria (31). Patients registered
as having AS fulfilled the modified New York 1984 criteria (32). The diagnostic criteria proposed at the Third International Workshop on Reactive Arthritis in 1995 were used to diagnose ReA (33).

Prevalence estimates

Prevalence was estimated on the basis of identification of established diagnosis from the registers of patients by rheumatologists, other specialists, and GPs; they were asked to report all living patients who had been diagnosed before 1 March 2002 (vital status was verified through the country’s central mortality register). One of the investigators evaluated the patient files in the registers of all rheumatologists. GPs and other specialists were asked to report the patients in written form. It was not possible to guarantee the adequate fulfillment of the above-mentioned classification criteria in all reported cases that had been diagnosed before the beginning of the study.

Procedures to improve case finding

To minimize the loss of patients (under-reporting), we informed medical centres, specialists, and GPs outside the study area that these could be used by patients from the study area with inflammatory joint disease. Patients living in the two study regions but diagnosed in the Institute of Rheumatology in Prague (country central specialist institute) were also identified and registered as cases.

To minimize selection bias and diagnostic misclassification, all collaborators in both districts underwent training in symptoms assessment. Rheumatologists were instructed to use unified classification criteria and were continuously assisted by investigators. Only rheumatologists were allowed to determine the definite diagnosis and to register new patients. A duplicity check was performed centrally at the end of the survey.

Statistical analysis

The age-standardized estimates of incidence and prevalence were calculated following Poisson distribution with 95% confidence intervals (CIs) using Stata 10 (Stata Corporation, College Station, TX, USA) and Microsoft Office Excel. For standardization we used the European standard population (downloaded in 2008 from www.euphix.org).

Results

A total of 501 patients (37 incident cases over the 1-year period and 464 prevalent cases on 1 March 2002) were diagnosed as having PsA, AS, or ReA. Age-standardized incidence and prevalence rates (both sex-specific and combined) of PsA, AS, and ReA are presented in Table 1.

Psoriatic arthritis

Incidence. Seven patients were identified and registered as new cases. This gave a total crude annual incidence for PsA in both districts of 3.8/100 000 (95% CI 1.5–7.8/100000) in the entire population and 4.6/100000 in the adult (≥16 years old) population (95% CI 1.8–9.4/100000). The age-standardized incidence rate was 3.6 (95% CI 1.4–7.6/100000). The male to female ratio was 1.3:1. The mean age of establishment of diagnosis was 51 years. In all new cases psoriasis preceded arthritis; the mean duration from psoriasis onset to diagnosis was 8.5 years. One patient was not able to state the year of psoriasis onset but their psoriasis also preceded the arthritis. In two cases, arthritis and psoriasis emerged within 1 year (28.6%). The mean duration from arthritis onset to diagnosis was 12 months.

The type of psoriasis was determined by dermatologists: in four patients (57.1%) as psoriasis vulgaris, in two as psoriasis pustulosa (28.6%), and in one as

Table 1. Age-standardized incidence and prevalence (and 95% CI) of PsA, AS, and ReA (per 100 000).

<table>
<thead>
<tr>
<th></th>
<th>Ceske Budejovice</th>
<th>Cheb</th>
<th>Both areas</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Psoriatic arthritis</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>6.2 (1.2–18.3)</td>
<td>2.7</td>
<td>4.5 (1.3–11.4)</td>
</tr>
<tr>
<td>Women</td>
<td>1.8 (0.5–10.7)</td>
<td>3.9</td>
<td>2.8 (0.6–8.7)</td>
</tr>
<tr>
<td>All</td>
<td>3.9 (1.0–10.2)</td>
<td>3.2</td>
<td>3.6 (1.4–7.6)</td>
</tr>
<tr>
<td><strong>Ankylosing spondylitis</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>9.8 (3.0–23.6)</td>
<td>10.3</td>
<td>10.0 (4.6–18.9)</td>
</tr>
<tr>
<td>Women</td>
<td>3.7 (0.8–14.0)</td>
<td>2.3</td>
<td>3.0 (0.6–9.0)</td>
</tr>
<tr>
<td>All</td>
<td>6.5 (2.5–13.9)</td>
<td>6.4</td>
<td>6.4 (3.3–11.3)</td>
</tr>
<tr>
<td><strong>Reactive arthritis</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>6.1 (1.1–18.1)</td>
<td>10.3</td>
<td>8.0 (3.3–16.3)</td>
</tr>
<tr>
<td>Women</td>
<td>12.4 (4.1–25.2)</td>
<td>8.6</td>
<td>10.5 (5.0–19.2)</td>
</tr>
<tr>
<td>All</td>
<td>9.3 (4.3–17.7)</td>
<td>9.4</td>
<td>9.3 (5.5–14.8)</td>
</tr>
</tbody>
</table>
patients (92.3%) suffered inflammatory back pain at the grade II–IV (53.8%), and unilateral sacroiliitis of grade of the first symptom onset to establishment of diagnosis was 4.4 (standard deviation 1.6). All patients had radiographs of the hands and the lumbosacral part of the spine. At the time of establishment of diagnosis four patients had erosions of the hand joints. The prevalence of radiographic evidence of sacroiliitis grade II (erosions, sclerosis) or grade III (broad erosions, unambiguous sclerosis, or partial ankylosis) in new patients was 71.4%. Neither distal erosions nor spinal involvement were proved in one patient (acute oligoarthritis was present). Most of the patients had a history of alternating enthesitis.

**Prevalence of PsA.** Ninety-six patients with PsA were registered as prevalent cases. This gave a total prevalence of 52/100 000 individuals (95% CI 41.8–63/100000) in the entire population and 62/100000 in the adult population (95% CI 50.5–76.2/100000). The age-standardized prevalence was 49.1 (95% CI 39.5–60.4/100000) and the male to female ratio was 0.85:1. The mean age of establishment of diagnosis was 55 years. In 33 patients (34.4%) we collected more information about the disease from patient files or from the patients coming for their regular examination during the study period. In 26 patients (79%) psoriasis preceded arthritis (with a mean of 10 years), and in seven patients (21%) arthritis preceded psoriasis with a mean of 5 years. The mean duration from psoriasis onset to diagnosis was 5 years, and the mean duration from arthritis onset to definite diagnosis was 1 year. In most of the remaining patients (65.6%) the medical records were either incomplete, and patients did not come to the examination at the time of the study, or (in a few cases) patients refused to give more information about the course of the disease.

### Ankylosing spondylitis

**Incidence.** Thirteen patients were identified and registered as incident cases. This gave a total crude annual incidence of AS in both districts of 8.5/100000 (95% CI 4.5–14.4/100000) in the adult population. The age-standardized incidence was 6.4 (95% CI 3.3–11.3/100000) and the male to female ratio was 3.3:1. The mean age of diagnosis was 48 years. The mean age at first symptom onset was 24 years and the mean duration of the first symptom onset to establishment of diagnosis was 11 years. Seven patients had bilateral sacroiliitis of grade II–IV (53.8%), and unilateral sacroiliitis of grade III–IV proved in six patients (46.2%). Twelve patients (92.3%) suffered inflammatory back pain at the time of diagnosis. Although one patient did not feel typical inflammatory pain, restriction of mobility of the lumbar spine in this case was proved together with a bilateral sacroiliitis of grade II (HLA-B27-negative patient). Of the incident patients, 61.5% fulfilled at least two of the three clinical criteria for AS. HLA-B27 positivity was examined in 10 out of 13 cases (76.9%). Of these, six were positive (60%). AS was defined as axial in six patients (46.2%), and in one patient had the axial form with peripheral arthritis (7.7%). Five patients had a history of enthesitis (38.5%) and two experienced iritis/uveitis (15.4%). None of the patients developed aortitis, amyloidosis, or fibrosis of the lung in the study period, and none suffered from inflammatory bowel disease. Such information could not be obtained in six patients (46.2%).

**Prevalence of AS.** We identified 185 patients as having AS before 1 March 2002. This gave a total crude prevalence of AS 99.4/100000 (95% CI 85.6–114.8/100000) in the entire population and 118.9/100 000 (95% CI 101.1–136.1/100 000) in the adult population. The age-standardized prevalence was 94.2 (95% CI 80.8–109.2/100000). The prevalence of AS for children younger than 16 years was 6.2/100000 (95% CI 0.7–22.4/100000). The male to female ratio was 4.6:1. The mean age of establishment of diagnosis was 34 years. Forty-eight registered patients (26.2%) answered questions about the course of their disease or the medical documentation was comprehensive. Of these, 40 patients had the axial form of AS and nine had the axial form with peripheral arthritis (83.3% and 18.8%, respectively). The most frequently affected joints were the hip, knee, small hand joints, and shoulder. Forty-seven patients had unilateral sacroiliitis grade III–IV (98%) and in only one patient was bilateral sacroiliitis grade II documented. All 48 patients with complete documentation experienced inflammatory back pain. Objective measurements of lumbar spine mobility and respiratory excursions of the thorax proved restriction in 46 and 40 patients, respectively. Enthesopathy was documented in 11 (23%) and uveitis/iritis in 17 cases (35%). Information about HLA-B27 testing was found in 50 cases. Of these, 31 patients were HLA-B27 positive (62%). In none of the prevalent patients was aortitis, amyloidosis, or fibrosis of the lung documented. Inflammatory bowel disease was documented in two women; in both, the first symptoms of AS occurred at the age of 37 years. One was HLA-B27 positive, with a history of uveitis and unilateral sacroiliitis grade III and the axial form of AS. The other was HLA-B27 negative, with bilateral sacroiliitis grade II and she also experienced uveitis.

### Reactive arthritis

**Incidence.** Seventeen patients were identified and registered as incident cases. This gave a total crude annual incidence of 9.1/100000 (95% CI 5.3–14.6/100000) in the entire population and 9.8/100000 (95% CI 5.4–16.1/
Prevalence of ReA. A total of 183 patients were found to have had ReA before 1 March 2002, giving a total prevalence of ReA 98.3/100000 (95% CI 84.6–113.7/100000) in the whole population and 119/100000 (95% CI 102.3–137.5/100000) in the adult population. The age-standardized incidence was 9.3 (95% CI 5.5–14.8/100000). Two patients < 16 years were identified; this gave an annual incidence of 6.2/100000 for children younger than 16 years (95% CI 0.8–22.4/100000). The male to female ratio was 0.7:1. The mean age of establishment of diagnosis was 39 years. The mean duration of first symptoms to diagnosis was 4 months. All patients with a new diagnosis of ReA had asymmetric arthritis of the lower limb joints predominantly. Ten patients (59%) had oligoarthritis, five monoarthritis (29%), and two developed polyarthritis (11%). Sacroiliitis was proved in 10 incident patients with ReA (58.8%); unilateral of grade III–IV in four patients (40%), and bilateral of grade II–IV in six (60%). HLA-B27 was not investigated. Enthesopathy was present in six patients (35%). The evidence of preceding infection was an important criterion. Eleven patients with postenteric ReA were identified, giving an annual incidence of 6/100000 (95% CI 3–10.6/100000). These patients had clear clinical diarrhoea in the preceding 4 weeks and/or a positive stool culture (Salmonella enteritidis) or in one case anti-Yersinia antibodies (immunoglobulin (Ig)G + IgA). Six patients had genitourinary ReA, giving an annual incidence of 3.2/100000 (95% CI 1.2–7/100000). These patients had clinical urethritis in the preceding 4 weeks (with IgG, IgM, and IgA types of IgG antibodies to Chlamydia trachomatis) and/or the finding of IgG antibodies to Ureaplasma urealyticum in the urogenital swab.

**Table 2. Causative factors of reactive arthritis in prevalent patients documented in patient files.**

<table>
<thead>
<tr>
<th>Documented causative factors of reactive arthritis (prevalent cases)</th>
<th>n (% of 147 patients)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Enteritis without specification</td>
<td>39 (26.5)</td>
</tr>
<tr>
<td>Salmonella enteritidis</td>
<td>18 (12.2)</td>
</tr>
<tr>
<td>Yersinia</td>
<td>4 (2.7)</td>
</tr>
<tr>
<td>Reiter syndrome</td>
<td>4 (2.7)</td>
</tr>
<tr>
<td>Uropinfection without specification</td>
<td>4 (2.7)</td>
</tr>
<tr>
<td><strong>Chlamydia trachomatis</strong></td>
<td>27 (18.4)</td>
</tr>
<tr>
<td>Ureaplasma urealyticum</td>
<td>32 (21.8)</td>
</tr>
<tr>
<td>Upper respiratory tract infection</td>
<td>11 (7.5)</td>
</tr>
<tr>
<td>Other infection (soft tissue infection, gastritis, septicaemia due to non-mentioned pathogens)</td>
<td>8 (5.4)</td>
</tr>
</tbody>
</table>

*In these patients, causation could be evaluated; such information was not given in the remaining 36 patients (19.7%).

A possible causative factor was documented in 147 patients (80.3%). Genitourinary ReA was reported with a similar frequency to postenteral ReA (67:61 cases). Detailed data are summarized in Table 2. Retrospective information about a causative pathogen was not accessible in the records of 36 patients (19.7%).

**Discussion**

There are several methodological points to discuss before comparing our results with other findings. One urban and one rural area were selected to better represent the whole country as only limited resources were available. Having only two areas it is only possible to speculate about the representativeness of the sample for the entire population of the country. Age standardization meant that the results of the selected area could be representative in terms of age structure. The social structure of the selected study regions is comparable to that of the whole country (using data from Census 2001; Czech Statistical Office). Both areas were easily defined geographically and administratively. Very good cooperation between GPs, practicing specialists, and rheumatologists was a great advantage of this survey. All of the collaborators were adequately informed and the presence of the investigator in the study area improved the quality of the recorded data.

A very high proportion of cases were referred to specialists but it is possible that not all were identified. Some patients were identified at the Institute of Rheumatology in Prague, but no resident patient was referred from neighbouring regions (although the specialists were informed and no-one refused to cooperate). Therefore, it can be assumed that the resident cases sought help in their home region or in the central Institute in the capital. The number of possible missed cases [cases seeking both specialist and basic medical help (provided by GPs) in a distant region] is probably very low and these cases should not substantially bias the results.
Informed consent was obtained in all incident cases and did not cause exclusion of patients from the study. There were no patients who were referred to the study team with a definite diagnosis and who were refused registration in the study. The incident patients did not have to provide all of the information requested, but most of them did in fact answer all of the questions. Optionality improved cooperation and prevented loss of information. The questionnaire was also used in prevalent patients who had visited the physician in the time of observation but it was fully answered only by 26% (PsA) to 54% (ReA) of these. The remaining patients either did not seek medical help in the study period or did not complete the questionnaire. No prevalent patient refused registration in the study.

Psoriatic arthritis

Previous studies addressing the incidence of PsA are mostly based on hospital records or health-care services in northern Europe, giving higher incidence rates (6–8/100 000) compared to our findings (although the CIs overlap) of 3.6/100 000 (95% CI 1.4–7.6) (1, 2, 4–6, 10, 11). Lower incidence rates were found in Greece (3.0/100 000 inhabitants) (3). The possible underestimation of the incidence of PsA may have been caused by several factors. First, we used the Vasey and Espinoza classification criteria while previous studies used criteria based on the principles of Moll and Wright (34). The Vasey and Espinoza criteria were chosen because they were being widely used at the time of the study. If we had used other classification criteria it would have been necessary to revise all the established diagnoses in the retrospective part of the study (a possible source of bias). However, the Vasey and Espinoza criteria have high specificity (between 93% and 99%) and higher sensitivity (99%) than the CASPAR criteria (35), and good feasibility in daily practice (13), and thus it is unlikely that the reported incidence or prevalence would be underestimated because of the classification criteria. Second, the methodology used is susceptible to missing mild or oligosymptomatic forms that do not fulfil the classification criteria at the time of observation. Third, insisting on confirmation of psoriasis by a dermatologist may have prolonged the diagnostic process and may have caused registrations in the study period to be delayed. The age at diagnosis of incident PsA was the same as in a previous study in Finland (6). The presence of radiographic evidence of sacroiliitis (grade II and above) was 71.4% in incident cases, compared to 78% in the USA (36). In agreement with previously published studies, psoriasis mostly preceded arthritis by 11 years (37, 38). Oligoarthritis was the most frequent subtype, followed by polyarthritis according to another study (1).

We found the prevalence rate of PsA (49.1/100 000, 95% CI 39.5–60.4) to be lower than that in previously published studies. The most recent studies suggest prevalence rates of 100–158/100 000 (1, 2, 10, 11). Lower prevalence rates may be caused by geographical differences, but there are no known data concerning the prevalence of psoriatic skin disease in the Czech population, which could be a possible explanation. There was no possibility of confirming the diagnosis of psoriasis by a dermatologist in the retrospective part of the study, which could be a possible source of bias. Because of the retrospective search of cases, the assessment of pelvic radiographs or CT scans by two observers could not be ensured in all prevalent patients.

Ankylosing spondylitis

The incidence (6.4/100 000, 95% CI 3.3–11.3) and prevalence (94.2/100 000, 95% CI 80.8–109.2) of AS in this study is consistent with published data from central Europe. A high prevalence of AS was found in Berlin by Braun et al (22) but different criteria and magnetic resonance scans were used. The higher prevalence found in Hungary (1977) and Czechoslovakia (1966) may be due to the use of older diagnostic criteria and a different sampling method (18, 24), although underestimation of disease rates due to the methodology is possible (missing of oligosymptomatic forms). However, no confirmation by other specialists was needed for AS. The prevalence of HLA-B27 in the Czech population was not investigated but is thought to be about 10%, similar to that in the neighbouring countries (17–19). HLA-B27 was specified in only 70.6% of registered incident AS cases and in 27% of prevalent cases, so evaluation of the prevalence of the allele among our AS patients is not possible in this study.

Reactive arthritis

There are only a few other studies that have addressed the incidence of ReA in a population-based setting, with incidence rates (10–28/100 000) similar to those (9.3/100 000, 95% CI 5.5–14.8) presented in our study. The incidence rates of postenteric and genitourinary ReA are in the lower part of the published incidence range (27, 28). The difference compared with other studies might be due to a true different in incidence (different frequencies of HLA-B27 in the population) or to various biases related to methodology. As mentioned previously, mild or oligosymptomatic patients not fulfilling inclusion criteria and patients with unsolved differential diagnoses were probably missed. As the course of ReA may be self-limiting, it is likely that not everyone with ReA sought medical help at the time of the study. There are also different laboratory methods used in various epidemiological studies. The frequency of genitourinary or enteral infections in the Czech population is observed continuously, and there were no elevated rates reported during the time of the
study. The patients with negative cultures and negative serology were not classified as having ReA, in contrast to other study designs.

The estimated prevalence of ReA (91.3/100000, 95% CI 78.1–106.2) is similar to data reported elsewhere (100/100000) (22, 28). Likely causative pathogens were mostly well documented. Patients with no documented positive cultures or positive serology were not classified as having ReA and were not included in the study.

Conclusions

In summary, this study presents the first estimates of the incidence and prevalence of PsA and ReA in the Czech Republic in a population-based survey, and the first estimates of the incidence and prevalence of AS since 1966. The occurrence of the rheumatological diseases studied is similar to that in published data in other European countries. The current policy of rapid referral of patients with new joint inflammation to a rheumatologist is conditioned by good cooperation with GPs and specialists.

Acknowledgements

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References


