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Costs of Rheumatoid Arthritis in Hungary

To the Editor:

Fleurence, *et al* identified 13 full economic evaluations for biological treatments in rheumatoid arthritis (RA) from the USA, UK, Sweden, Spain, and The Netherlands¹. Results of these studies are unlikely to be fully relevant to Hungary due to differences in healthcare systems, referral practices, costs, financing, and gross domestic product^{2,3}. In Hungary, cost-effectiveness analyses relating to all new drugs before reimbursement have been required since 2004. To perform such economic evaluations of registered biologic therapies, data on current treatments and costs of RA are required.

We therefore performed a cross-sectional questionnaire survey to establish Hungarian baseline information for economic evaluations; 257 consecutive patients with RA in 6 hospital-based rheumatology outpatient centers were included during routine outpatient visits in 2004. Interviewing patients and using medical records, rheumatologists completed a questionnaire regarding cost domains, designed by our working group following the guidelines of the Economics Working Group of Outcome Measures in Rheumatoid Arthritis Clinical Trials (OMERACT)^{4,5}. The Health Assessment Questionnaire (HAQ, range 0–3) and a generic utility instrument (EQ-5D, range 0–1) were completed by the patients.

The national health insurance system covers the entire population in Hungary. We used official price and reimbursement lists as sources for cost calculations (for outpatients: fee-for-service point system; for acute care inpatients: Disease Related Groups; and for patients in chronic hospitalization: per diem basis), while data for nonreimbursed medical services were based upon patients' answers. The average hourly net wage (2 Euro/hour) was used to estimate costs of RA-related informal care, and productivity losses were calculated using the human capital approach, based on the average gross income (490 Euro/month) (conversion: 250 HUF = 1 Euro).

After exclusion of 2 patients receiving biologic therapy, 255 patients were included in the analysis: 86% female, mean age 55 years (SD 12.3), and disease duration 9.06 years (SD 9.2). Concomitant diseases were present in 68%. Disease modifying antirheumatic drugs (DMARD) were used by 88% and oral corticosteroids by 48%. The mean Disease Activity Score was 5.09 (SD 1.42), mean HAQ was 1.38 (SD 0.76), and mean utility score

was 0.46 (SD 0.33). HAQ and utility scores correlated significantly (EQ-5D = 0.85 – 0.282 × HAQ; R = 0.643).

During the previous year, patients had on average 8.9 (SD 6.1) visits to the general practitioner and 5.8 (SD 5.5) to a specialist. Orthopedic surgery was carried out in 7% of patients, nonreimbursed healthcare services were used by 10.9%, and 9.8% had to renovate their houses. Informal care was used on average for 1.85 hours/day. Only 23% of patients were working (18% fulltime), while as many as 37% were receiving disability pension and 1% were on extended sick-leave; 34% were in normal retirement. Production losses occurred for 116 patients (45.5%), and 20.5% of patients had received sick-allowance due to RA in the previous year.

Unit prices for drugs, healthcare service utilization rates, and yearly mean cost per patient are presented in Table 1. The average total cost amounted to mean 4173 (SD 3379) Euro/patient/year (direct costs 45%, indirect costs 55%). Costs correlated significantly with HAQ results (R = 0.382).

This is the first cross-sectional, multicenter study to provide preliminary data on health status and costs of RA in Hungary. Considering the disease duration and HAQ scores of our sample, disease progression in Hungary seems to be comparable to international cohorts reported in cost-effectiveness studies¹. Correlations between EQ-5D and HAQ scores were confirmed and the equation was similar to that applied by Barton, *et al*⁶. As well, costs correlated with HAQ scores, but the absolute costs were, as expected, much lower. Detailed comparison is difficult because published cost-effectiveness studies used diverse methods and costs data were not uniformly presented. Matching our results with cost of illness studies using the OMERACT cost matrix, the amount of total costs in Hungary is roughly equivalent only to the direct costs reported from France⁷ and The Netherlands⁸ (4000 and 5028 Euro/patient/year, respectively). In Belgium, direct costs reported for late RA (disease duration 12.5 yrs) were even higher, 9946 Euro/patient/year⁹. In Germany, direct costs were comparable to ours (2312 Euro), but indirect costs were much higher (for sick-leave 2835 Euro/patient/year, for a disability pension 8358 Euro/patient/year)¹⁰.

Analysis of cost domains revealed that lower unit costs and average gross wages in Hungary are the main determinant factors of the differences. Nonmedical direct costs are also strongly influenced by the alterations in healthcare consumption rates due to disability. In France, formal homecare use was higher (12.6% vs 0.4% in Hungary), while in Hungary informal care was dominant (50.2%). Costs of institutionalization due to RA were mean 222 Euro/patient/year in France, while this type of care did not occur in our study⁷.

Regarding the validity of the results, it should be considered that 4 of the 7 leading rheumatology centers in Hungary were involved. Thus the sample cannot be regarded as representative of the whole RA population, as probably both their disease activity and the rate of patients with DMARD refractory RA were higher. However, our results proved that cost elements of studies from more developed countries cannot be applied without adjustment. Also costs in Hungary may increase in the future with respect to a higher percentage of patients treated with biologic agents.

We have been the first of the 12 new European Union member states to describe a cross-sectional survey of RA related health status and costs. Our data can also serve to approximate costs in other countries in the region with similar healthcare systems and economic structures.

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Table 1. Unit prices, healthcare utilization rates of major cost items, and average annual costs due to RA in Hungary, 2004. All costs are Euros.

| Healthcare | Unit Prices Euro/mean yrly dose/pt | No. Patients Receiving (%) | Mean Annual Costs: all patients whether receiving the specific procedure or not, n = 255 (Euro/patient/yr) | | |
|--|--|-------------------------------|---|---|--|
| Drugs | | | | | |
| Methotrexate tablets | 40 | 115 (45) | 358 | } | |
| Leflunomide tablets | 940 | 54 (21) | | | |
| Other DMARD (azathioprine, sulfasalazine, hydroxychloroquine, auranofin, cyclosporine) | 545 | 55 (21.6) | 15 | } | Drugs: 506 |
| DMARD monitoring | 10.8 | 224 (88) | | | |
| Methylprednisolone or prednisolone tablets | 45.2 | 120 (47.6) | 27 | } | Outpatient: 562 |
| Intraarticular steroid injection (4 x/yr) | 14.7 | 54 (21.3) | | | |
| NSAID tablets | 22.4 | 152 (60.2) | 42 | | |
| Gastroprotection | 43.8 | 34 (13.3) | 64 | | |
| Procedures, Euro/event | | | | | |
| Radiographs of hands, feet | 2 | 188 (74.6) | 4 | } | Diagnostics: 8 |
| Computed tomography | 25 | 14 (5.5) | 1 | | |
| Magnetic resonance imaging | 25 | 22 (8.6) | 2 | | |
| Gastroscopy | 6 | 30 (11.8) | 1 | } | Visits: 48 |
| GP visit | 2.9 | 199 (79.3) | 19 | | |
| Specialist visit | 4.4 | 245 (96.5) | 29 | | |
| Total hip replacement | 1826 | 3 (1.2) | 76 | } | Hospital care: 537 |
| Arthroscopy | 248 | 2 (0.8) | | | |
| Hand or foot surgery | 108 | 8 (3.1) | 461 | } | Inpatient: 537 |
| Admission to hospital | 426 | 159 (62.6) | | | |
| Spa therapy (Euro/therapy course) | 72 | 30 (11.8) | 10 | } | Other: 50 |
| Physiotherapy (Euro/therapy course) | 24 | 56 (22) | 7 | | |
| Formal homecare | 11 | 1 (0.4) | 0 | | |
| Other nonreimbursed services (mean/yr) | 184 | 27 (10.9) | 20 | | |
| Orthopedic shoes | 42.8 | 35 (13.8) | 14 | } | |
| Knee orthosis | 73.6 | 6 (2.4) | | | |
| Home remodelling (mean/year/receiving patient) | 963 | 25 (9.8) | 94 | | |
| Ambulance transportation (Euro/100 km) | 150 | 34 (14) | 15 | } | Direct nonmedical costs: 737 (17.7%) |
| Other transportation (train, bus, car; Euro/100 km) | 4 | 221 (86) | 14 | | |
| Informal care | 2 | 128 (50.2) | 614 | | |
| Disabled* | | 94 (37) | 2056 | } | Indirect costs (productivity loss): 2287 (54.8%) |
| Part-time job* | | 46 (18) | 185 | | |
| Extended sick-leave* | | 3 (1) | 2 | | |
| Sick-leave* | | 52 (20.5) | 44 | | |

* Calculated based on average gross wage (490 Euro/patient/month, year 2003). Permanent full disability calculations were based on the loss of total average gross wages, while for partial disability 50% of the wage rate was used. Patients receiving a fixed amount of disability benefit (80 Euro/mo) and having no part-time job were regarded as losing total gross wage. Part-time jobs due to RA are represented as 50% lost wages. The cost of sick-leave was calculated by multiplying the average gross wage with the number of days off work.

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Correction

Genovese MC, Mease PJ, Thomson GTD, et al, for the M02-570 Study Group. Safety and efficacy of adalimumab in treatment of patients with psoriatic arthritis who had failed disease modifying antirheumatic drug therapy. *J Rheumatol* 2007;34:1040-50. Table 1. At line 7 under the side heading Medications: Use of NSAID at baseline for the Adalimumab 40 mg eow group; n (%) should be 37 (72.5) not 37 (72.6). At line 9: Use of oral corticosteroids at baseline for the Placebo group; n (%) should be 8 (16.3) not 9 (18.4). We regret the errors.