

Establishment of the International Assessment Committee of Bone and Joint Diseases

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ABSTRACT. During the International Conference of the Bone and Joint Decade, held in Tokyo in April 2002, the International Assessment Committee of Bone and Joint Diseases was established. This committee is responsible for data collection, effective prevention and treatment, supply of care provisions, costs and priorities, and measurement to determine the outcome of patients with bone and joint diseases. Study planning was initiated by the Japanese Committee of Assessment, in cooperation with the Bone and Joint Monitor Project conducted by Prof. Anthony Woolf. As a result of our studies, we expect to obtain data concerning international comparisons of incidence, prevalence, and impact, as well as secular trends regarding the burden of musculoskeletal conditions, risk factors, and outcomes of each condition. Described here are results of population-based studies regarding the prevalence of rheumatoid arthritis (RA), osteoarthritis, osteoporosis, and limb fractures in Japan compared with those in Western countries, as well as a comparison of secular trends of RA incidence between Japanese and European subjects. (*J Rheumatol* 2003;30 Suppl 67:66–68)

Key Indexing Terms:

RHEUMATOID ARTHRITIS
SECULAR TREND

OSTEOARTHRITIS
OSTEOPOROSIS AND NUTRITION

PREVALENCE
LIMB FRACTURE

During the International Conference of the Bone and Joint Decade, held in Tokyo in April 2002, the International Assessment Committee of Bone and Joint Diseases was established, along with a declaration of the Bone and Joint Decade by the World Health Organization. This committee is composed of 2 groups: a steering group, which considers the aims and objectives of projects (members: Professors K. Shichikawa, Y. Shiokawa, K. Yoshida, A. Woolf, K. Åkesson, and M. Hazes; and Drs. J. McGowan, C. Mathers, and N. Khaltayev), and an implementation group, which considers methodology and data analysis (members: Professors D. Symmons, J. Bijlsma, F. Guillemin, C. Cooper, and Dr. E. Mackenzie). As a function of this committee, a network of collaborators will undertake surveys of bone and joint diseases.

A preparatory meeting was held the day before the conference, which included Professors Woolf, Shiokawa (Chairman of the Japanese Rheumatism Foundation), Dr. Kahltaef (a World Health Organization delegate), Mr. M. Mugitani (a Japanese government official), and Professors Åkesson and Shichikawa. The project was designed according to the plan of action proposed in the Tokyo Declaration¹. The principles of this plan were set forth as: (1) An appeal to society, (2) patient education for self-management, (3) cost-effective prevention and treatment, and (4) advancement of research.

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Medicine in 4 Dimensions

To achieve the goal of the Tokyo Declaration, data regarding the burden of bone and joint diseases are necessary; however, there is an even greater need to stimulate medical education innovation. Three important points are to be stressed: (1) focus on disease-oriented medicine should be shifted more to prevention-oriented medicine; (2) focus on short-term evidence-oriented medicine should be shifted to longterm outcome-oriented medicine; and (3) focus on specialty-oriented medicine should be shifted to general-oriented medicine. For doctors who work in the field of musculoskeletal conditions, these new orientations are indispensable and more important than those for other disciplines. We have termed this “medicine in 4 dimensions,” since changes by time and those assessments become a primary concern.

First, we determined that doctors can become involved in this strategy through: (1) data collection, (2) effective prevention and treatment to reduce burden of musculoskeletal disease, (3) care provision, (4) costs and priorities, and (5) outcome measurement.

Data Collection

The aim of the International Bone and Joint Burden of Disease Study is to implement measurements of outcome, evaluate current burden of musculoskeletal conditions, and establish a monitoring method for the future. Study planning was initiated by the Japanese Committee of Assessment along with the Bone and Joint Monitor Project². Through this study, we expect to obtain data regarding the following: (1) international comparisons of incidence, prevalence, and impact; (2) secular trends of the

burden of musculoskeletal disease; (3) risk factors; and (4) outcome of each condition.

International Comparison

International comparisons will increase understanding of effective preventive measures. Figure 1 shows a comparison of the prevalence of radiological osteoarthritis (OA) in several joints between Japanese and European and American populations. The prevalence of OA of the hip and first carpometacarpal joint was significantly lower in Japanese, whereas that of the knee, spine, distal interphalangeal, proximal interphalangeal, and metacarpophalangeal joint showed no difference between the 2 populations³⁻⁵. According to a comparison of fracture incidence in Tottori Prefecture in Japan with other areas outside of Japan⁶, a Japanese population had fewer limb fractures compared with European populations, especially among women; this was suggested to be due to differences in lifestyle.

Secular Trend

When obtained, data for secular trends regarding the burden of musculoskeletal disease will provide a great contribution toward understanding effective preventive measures. In this respect, changes in the incidence and prevalence of rheumatoid arthritis (RA), confirmed by longterm population studies, would be very informative. Interestingly, 4 longterm surveys conducted in different countries and races found a similar trend of decreases in incidence or prevalence of RA in women^{7,8}. From their results, the European and American authors hypothesized that contraceptives may have been responsible for these changes. However, we consider that environmental factors and/or changes in lifestyle had a greater influence, since contraceptives were not on the market in Japan during the period of investigation.

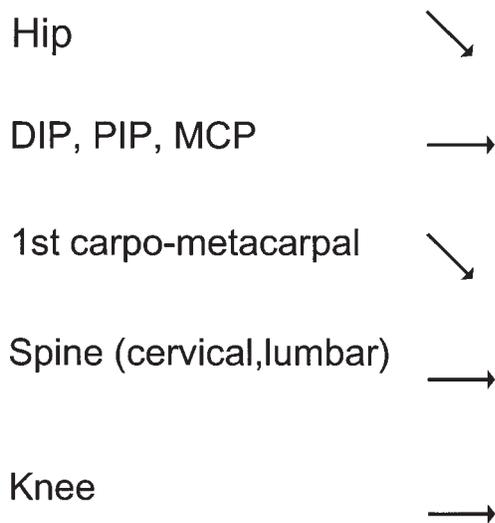


Figure 1. Prevalence of osteoarthritis in a Japanese population as compared with European and American populations. DIP: distal interphalangeal joint, PIP: proximal interphalangeal joint, MCP: metacarpophalangeal joint.

Risk Factors and Outcome

Risk factors and outcomes for each musculoskeletal condition should also be studied, as they would be the most valuable markers for developing strategies for prevention and treatment. In particular, the effects of nutrition and education must be considered and assessed.

Regarding nutrition, according to a population study in Mie Prefecture by Sudo, *et al*⁹, a group of alcohol or fish consumers showed significantly higher bone mineral density, when measured with a microdensitometer (Table 1). As for education, our clinical data show that RA is less severe in patients with higher levels of education, although a population-based study was not done, since it would involve difficulties such as how to assess and what to measure. A study of educational background must be started from a young age, preferably childhood.

Musculoskeletal Conditions To Be Studied

Musculoskeletal conditions being considered by our committee: Rheumatoid arthritis, osteoarthritis, osteoporosis, gout, backache; limb trauma; and all musculoskeletal conditions together.

Regarding limb trauma, it is well known that the incidence of limb fracture in the whole population grows with an increase in the number of aged people. Regarding limb fractures, incidences of fractures of the hip, distal radius, and proximal humerus increased in Tottori Prefecture from 1986 to 1995, especially in women, according to a population study conducted by Hagino, *et al*⁶. However, their results were lower than those from European countries. Thus, it seems that incidence of limb fracture is greatly influenced by changes in environment and lifestyle. Our concern is more with prevention than treatment of limb fracture; thus, our efforts will be directed toward environmental improvement such as traffic, speed, workplace, sports, participation in armed conflict, as well as other facets.

Indicators To Be Measured

The indicators to be measured are: Incidence, prevalence, mortality (in association with RA), risk factors, quality of

Table 1. Alcohol or fish intake and Σ GS/D. Population survey in Mie Prefecture, Japan.

	No.	Σ GS/D	p
Alcohol intake			
No	589	2.375 \pm 0.36	< 0.0001
Yes	109	2.525 \pm 0.37	
Fish eating			
Nearly every day	544	2.591 \pm 0.40	0.004
1-4 times/week	484	2.520 \pm 0.40	
Almost never	26	2.341 \pm 0.45	

Σ GS/D: score of bone mineral density.

life, health resource utilization, economic impact, absenteeism, social support, and pensions.

We are currently performing a population study of musculoskeletal conditions of patients in 5 locations in Japan (Hiroshima, Tottori, Osaka, Wakayama, and Mie prefectures), applying incidence, prevalence, and influence on health and economics as survey and assessment indicators now and at 10 years.

Study Resources

Organizations including governmental or nongovernmental centers or study groups that focus on the burden of bone and joint diseases should be created regionally throughout the world to collaborate to monitor the course and results of longterm studies concerning the prevention and treatment of musculoskeletal conditions. Such organizations would also be expected to function as resource providers for study groups. Our hope is that this dream will soon become a reality.

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