

## Utilization Characteristics of Health Care Service for Rheumatoid Arthritis Patients in Korea

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*The purpose of this study was to determine the factors which were responsible for delaying early diagnosis and optimal management of rheumatoid arthritis (RA) in Korea. We interviewed 109 outpatients diagnosed as RA and being treated by rheumatologists, and we eventually analyzed 98 patients' data. The median length of time from symptom onset to the first visit to a medical doctor, to diagnosis, and to visiting a rheumatologist were 8 weeks, 23 weeks, and 42 months respectively. The subspecialists with whom the patients consulted with for the longest time before visiting a rheumatologist were an orthopaedic surgeon for 51 patients, a Chinese herbal doctor for 19 patients, and a pharmacist for 16 patients. For early diagnosis and optimal management of RA in Korea, we believe that it is necessary to reduce the use of unconventional medical services such as Chinese herbal medicine and nonprescribed medication, and to emphasize rheumatologic and rehabilitative care in the early stage.*

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**Key Words:** Rheumatoid arthritis, rehabilitation

Rheumatoid arthritis (RA) is now known to be frequently associated with severe morbidity, functional decline and decreased longevity (Pincus and Callahan, 1993). Recent studies have shown that RA can induce joint damage and disability even in the early stage (Fuchs *et al.* 1989), and aggressive medication in the early stage may alter the disease course (Van der Heijde *et al.* 1989; Van der Heijde *et al.* 1996). It is generally accepted that in the management of RA, early diagnosis and timely introduction of therapeutic agents are very important in order to reduce the probability of irreversible joint damage (Harris,

1990). Patient education and coordinated multidisciplinary rehabilitative care play major roles in the management of RA because RA often causes several medical complications, psychological problems, economic loss and frequent use of unconventional remedies (Vignos *et al.* 1976; Ahlmen *et al.* 1988).

The optimal management of RA in the early stage is not common in Korea because the medical care system couples modern medicine and Chinese herbal medicine, and many patients favor unconventional remedies including Chinese herbal medicine. In this study, we surveyed the practices of the health care system for RA patients in Korea, including conventional and unconventional remedies. The purpose of this study was to determine the factors which were responsible for delaying early diagnosis and optimal management of RA in Korea.

### MATERIALS AND METHODS

We studied 109 individuals from the out-patient

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clinic who were diagnosed with RA and were being treated by rheumatologists at Severance Hospital, Shinchon, Seoul, Korea. The data was obtained through interviews with the patients by two medical doctors, followed by a review of medical records. The interview was comprised of the following: demographic factors, the subspecialty of the physician, and the types of remedies used by the patient from symptom onset including conventional and unconventional remedies. We analyzed 98 patients' data and omitted the data of 11 patients who could not accurately recall their past history about RA.

For simplification and to control the variables, we defined a conventional remedy as one prescribed or advised by a medical doctor and an unconventional remedy as one not recommended by a medical doctor. In which case a remedy provided by a Chinese herbal doctor or a pharmacist without a medical doctor's order was classified as unconventional. Simple physical therapy was defined as physical therapy only intended to relieve pain; for example, the use of a hot pack or an ultrasound treatment. Exercise or education for joint protection was not included in simple physical therapy.

**RESULTS**

The mean age of the 98 patients was 44 years and 85 patients were female. The mean age of symptom

onset was 35 years and the median prevalence period was 4 years (range 21 weeks to 35 years). Eighty-two patients were rheumatoid factor positive and the mean Modified Health Assessment Questionnaire (MHAQ) score was 1.42 (1.00~2.50). All 98 RA patients fulfilled the American College of Rheumatology 1987 revised criteria for the disease (Arnett *et al.* 1988).

The subspecialists in health care service that patients with RA first visited after symptom onset, including conventional and unconventional health care service, were an orthopaedic surgeon for 38 patients, a Chinese herbal doctor for 22 patients, and a pharmacist for 17 patients (Table 1). In total, 59 of 98 patients at first utilized conventional health care service and 39 patients used unconventional health care service. The median duration of time from symptom onset to the first visit to a medical doctor was 8 weeks (range 1 week to 15 years). The median duration from symptom onset to diagnosis was 23 weeks (range 1 week to 18 years), and the median duration from symptom onset to the first visit to a rheumatologist was 42 months (range 1 month to 30 years). Initial diagnosis of RA was made by an orthopaedic surgeon for 58 patients, a rheumatologist for 25 patients, and an internist other than a rheumatologist for 5 patients. For the remaining 10 patients, the initial diagnosis was made by a variety of other specialists.

The subspecialists with whom patients consulted for the longest time before visiting a rheumatologist were an orthopaedic surgeon for 51 patients, a Chinese herbal doctor for 19 patients, and a pharmacist for 16 patients. The longest-used remedies before visiting a rheumatologist were medication for 53

**Table 1. Utilization characteristics of health care service for 98 patients with RA**

Type of subspeciality	First visit	Diagnosis	Longest management
Orthopaedic surgeon	38	58	51
Chinese herbal doctor	22	—	19
Pharmacist	17	—	16
Internist	8	5	5
Primary care physician	6	4	2
Neurosurgeon	3	3	2
Rheumatologist	1	25	—
General surgeon	2	2	1
Physiatrist	1	1	1
Others	0	0	1

\*: Values are number of cases.

**Table 2. Longest-used remedy for 98 patients with RA before visiting a rheumatologist**

Type of remedy	No. of patients
Medication	53
Medication+simple physical therapy	18
Herbs	14
Herbs+acupuncture	6
Simple physical therapy	2
Acupuncture	2
Joint injection of steroid and/or aspiration	2
Joint operation	1

**Table 3. Conventional remedies for 98 RA patients before visiting a rheumatologist**

Type of remedy	No. of patients
Medication	85
Simple physical therapy	45
Joint injection of steroid and/or aspiration	24
Joint operation	7
Rehabilitative care	1

patients, medication + simple physical therapy for 18 patients, herbs for 14 patients and herbs + acupuncture for 6 patients (Table 2).

The conventional health care remedies that patients used before visiting a rheumatologist at least once were prescribed medication for 85 patients, simple physical therapy for pain control such as hot pack or ultrasound for 45 patients, and joint injection of steroid and/or aspiration for 24 patients. Only one patient requested rehabilitative care (Table 3).

Ninety-three of 98 patients from symptom onset to the time of this survey used at least one unconventional remedy (mean 4, maximum 10) (Table 4). The most commonly used unconventional remedies included herbs for 79 patients, acupuncture for 63 patients, nonprescribed medication for 45 patients, and soup made of cat for 39 patients. Six of 79 patients who took herbs and three of 63 patients who had acupuncture had transient effects. No patients were reported to have any long-term effects from the unconventional remedies they used.

## DISCUSSION

The median duration from symptom onset to the first visit to a medical doctor was 8 weeks, and from symptom onset to definite diagnosis was 23 weeks. One study performed by Chan *et al.* at Central Massachusetts showed that the median time interval from symptom onset to the first visit to a medical doctor was 4 weeks, and that the median time interval to diagnosis was 22 weeks (Chan *et al.* 1994). Linos *et al.* reported that the median duration between symptom onset and earliest diagnosis for 488 patients in Rochester, Minnesota, was 194 days

**Table 4. Unconventional remedies used by 98 patients with RA**

Type of remedy	No. of patients
Herbs	79
Acupuncture	63
Nonprescribed medication	45
Soup made of cat	39
Plants	34
Moxibustion	24
Bracelets	19
Special diet	14
Cupping therapy	9
Spa	8
Others	60

for males and 230 days for females (Linus *et al.* 1980). It became apparent that in comparison with RA patients in the United States, RA patients in Korea lost twice as much time in eventually consulting a medical doctor, but there was no difference in the gross length of time to definite diagnosis. Thirty-nine patients at first employed unconventional health care service such as Chinese herbal medicine or nonprescribed medication after symptom onset, which can be considered the major factor responsible for delaying the initial visit to a medical doctor. Therefore, we concluded that the length of time from symptom onset to the first visit to a medical doctor can be shortened by reducing the use of Chinese herbal medicine and nonprescribed medication, thus reducing the length of time to definite diagnosis. As well, the frequent use of unconventional remedies seems to cause economic loss and the potential for side effects (Cronan *et al.* 1989).

Chan *et al.* suggested that the initial diagnosis of RA was made by a rheumatologist in 87.8% of the subjects surveyed and by an internist in 12.3% (Chan *et al.* 1994). And Linos *et al.* suggested that the initial diagnosis of RA was confirmed by a rheumatologist in 61% of patients and by an internist in 35% (Linus *et al.* 1980). In this study, 59% of patients were diagnosed by an orthopaedic surgeon and 25% by a rheumatologist. In comparison with studies in the United States, the number of confirmations by a rheumatologist was very low while the number of confirmations by an orthopaedic surgeon was very high. We can conclude from these results that

the general Korean population has easier access to an orthopaedic surgeon than a rheumatologist because the history of rheumatology is very short compared to orthopaedic surgery, and therefore the number of rheumatologists is far fewer than that of orthopaedic surgeons.

Regarding the remedies received by patients, those utilized for the longest time before visiting a rheumatologist were medications, regardless of the combination with physical therapy, in 71 patients. None of the 98 patients sought rehabilitative care. Among the types of conventional remedies used by patients before visiting a rheumatologist, medications were used at least once by 85 patients and two of 85 patients used DMARDs. Only one of 98 patients had utilized rehabilitative care. The goal of management for RA is to intervene in the disease before joints are damaged. Recent studies have shown that RA can induce joint damage even in the early stage (Fuchs *et al.* 1989) and aggressive medication such as DMARDs in the early stage may alter the disease course (Van der Heijde *et al.* 1989; Van der Heijde *et al.* 1996). Therefore, the optimal management for RA requires comprehensive coordinated care in the early stage. The essential components for optimal management include early diagnosis, timely introduction of agents that reduce the irreversible joint damage and rehabilitative care that prevents joint destruction using joint protection techniques and various exercises (American College of Rheumatology Ad Hoc Committee on Clinical Guidelines, 1996). On the assumption that combining aggressive medication, such as DMARDs, with rehabilitative care is the optimal management strategy available at present, there is not much difference in the length of duration to diagnosis between Korea and the United States, but the possibility of getting optimal management after diagnosis in Korea is likely to be diminished compared to the United States. Therefore, the utilization of rheumatologic and rehabilitative care will have to increase for the optimal management of RA in Korea.

The number of unconventional medical services employed by patients to the time of this survey in Korea was 4, a number similar to that from Wasner's study (Wasner *et al.* 1980). He reported that 94% of patients used at least one unproven remedy (mean 4, maximum 13) and the most commonly used

remedies included liniments (68%), copper and jewelry (41%), and special diet (39%). The study by Brown (Brown *et al.* 1980) showed diets (74%), copper bracelets (52%), vitamins (42%), and acupuncture (34%), while the study by Higham and Jayson (1982) showed liniments (71%), herbs (59%), analgesics (79%) and home remedies (78%). This study, however, revealed herbs (81%), acupuncture (64%), nonprescribed drugs (46%), and soup made of cat (40%). In comparison with studies abroad, patients in Korea used herbal medicine, acupuncture, and nonprescribed drugs much more. We think this is due to the characteristics of the Korean health care system, coupling Chinese herbal medicine and modern medicine, and easy patient-access to drugs without a medical doctor's prescription. Due to the superstition that a cat's flexibility may affect arthritis, soup made of cat was very often used.

The major limitation faced in this study was that the data was partly based on the memory of patients. In order to overcome this limitation, we excluded every case where a patient could not accurately recall his or her past history about RA. Another problem in this study was that the subjects were being treated at a relatively-qualified hospital located in the capital city of Seoul and did not represent typical Korean RA patients.

In conclusion, for early diagnosis and optimal management of RA, we believe it is necessary to reduce the use of unconventional health care services such as Chinese herbal medicine and nonprescribed medication, and to emphasize rheumatologic and rehabilitative care in Korea.

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