Work disability in early rheumatoid arthritis

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Clin Exp Rheumatol 2003; 21 (Suppl. 31): S71-S74.

Key words: Work disability, rheumatoid arthritis.

ABSTRACT

Patients with rheumatoid arthritis (RA) are at risk of work disability from the very start of their symptoms. Prospective cohorts including patients with early RA show that 20-30% become permanently work disabled during the first 2-3 years of the disease. Risk factors for early work disability include a physically demanding job, older age, and lower educational level, as well as the level of functional disability in daily activities. Work disability accounts for a major fraction of the costs of RA both to the patient and to society. Improved work disability outcomes in RA may require attention to social, economic, and political issues, and broader physician and public education concerning RA, in addition to improved medical management of the disease.

Rates of work disability in RA

Work disability is a frequent problem for patients with rheumatoid arthritis (RA), which was analyzed initially in the early 1980s in the USA (1), and Finland (2). Despite wide social and economic variations between these countries, both studies reported that more than 50% of patients with RA became work disabled during the first ten years of the disease. Subsequently, high rates of permanent work disability in RA have been confirmed in several other cross-sectional and longitudinal observational studies (Table I) (1-15). Furthermore, work disability has remained common in prospective studies which included patients with early RA (Table II) (16-25).

Work disability is considered to be a long-term consequence of RA. This is true in the sense that work disability increases over the years, and a high work disability rate is seen in most cohorts of patients in which the average disease duration is more than 10 years. Furthermore, once an individual becomes work disabled, he or she usually never goes back to work. However, prospective studies from Finland, Sweden, Germany, Great Britain, and the Netherlands indicate that 20-30% of patients became work disabled during the first three years of RA (Table II).

Table I. Work disability in rheumatoid arthritis. Cross sectional and longitudinal observational studies.

Reference	Type of study	Number of patients	Mean disease duration (years) at start/ at review	% working at review
Yelin *et al*. 1980 (1)	CS	180	10	40%
Mäkisara & Mäkisara 1982 (2)	CS	405	10	50%
Pincus *et al.* 1984 (3)	LO 9 Yrs	75	11/20	15%
Yelin *et al*. 1987 (4)	LO 4 Yrs	306	10/14	50%
Reisine *et al*. 1989 (5)	CS	122	NA	57%
Callahan *et al*. 1992 (6)	CS	175	11	28%
Doeglas *et al.* 1995 (7)	CS	119	2	58%
Reisine *et al*. 1995 (8)	LO 5 Yrs	392	9/14	66%
Allaire *et al*. 1996 (9)	CS	469	7	78%
Van Jaarsveld *et al*. 1998 (10)	CS	211	3	75%
Wolfe & Hawley 1998 (11)	LO 18 Yrs	436	5/NA	NA
De Roos & Callahan 1999 (12)	CS	705	11	64%
Chorus *et al.* 2001 (13)	CS	720	Range 2-32	52%
Sokka & Pincus, 2001 (14)	CS	127	2	90%
Odegard *et al.* 2003 (15)	LO 7 Yrs	159	8/15	60%

CS = cross sectional; LO = longitudinal

Table II. Work disability in rheumatoid arthritis; prospective studies including patients with early rheumatoid arthritis.

Reference	No of patients	Mean disease duration (years) at review	% working at review
Kaarela *et al*. 1987 (16)	103	1	69%
Jäntti *et al*. 1999 (30)		20	20%
Borg *et al*.1991 (17)	83	2	63%
Mau *et al*. 1996 (18)	73	6	51%
Fex *et al*.1998 (19)	86	7	66%
Sokka *et al*. 1999 (20)	82	10	58%
Albers *et al*. 1999 (21)	186	3	58%
Barrett *et al*. 2000 (22)	160	10	61%
Barrett *et al*. 2000 (22)	134	2	67%
Newhall-Perry *et al*. 2000 (23)	95	1	82%
Paimela *et al*. 2000 (48)	102	7	70%
Young *et al*. 2002 (24)	353	5	60%
Puolakka *et al*. 2002 (44)	80, on combination	5	80%
	82, single DMARD	5	71%
Häkkinen *et al*. 2003 (25)	50	2	68%

DMARD=disease modifying anti-rheumatic drug

Rapid development of work disability in early RA can be seen in data illustrating the cumulative probability of permanent work disability, such as in a Finnish cohort over 10 years (Fig. 1).

Work disability rates in early RA in the US appear to be more favorable than those in Europe (14, 23,26), perhaps reflecting different social policies. This phenomenon might be studied using a cross-continental approach in the future.

Variables that predict which patients with RA discontinue active employment

Work disability in RA has traditionally been regarded as associated with medical parameters such as range of motion of the joints and rheumatoid factor, which continue to count as important factors in the process of applying for work disability. However, several studies indicate that permanent work disability is associated more closely with demographics and work variables than medical factors. Patients who have physically demanding jobs, an older age, and lower educational level are substantially more likely to become work disabled than younger, more well educated patients with less physically demanding jobs [see earlier review (27)].

Among the medical parameters, functional disability in the activities of daily living, which is measured by the Health Assessment Questionnaire (HAQ) (28) or its modified version MHAQ (29), now appears to be the best predictor of permanent work disability (17, 19, 20, 22, 24, 30). Indeed, knowledge of age, duration of disease, occupation and MHAQ scores identifies patients who are working or receiving work disability payments, while radiographs, joint counts and laboratory data add little further to identify who is working or disabled, although these traditional data are included in the disability application (6).

In addition, associated variables such as health insurance coverage, social security arrangements, the subject's responsibility as the family's wage-earner, and the subject's attitude to work may influence work disability. These are potential variables that might explain the lower work disability rates in early RA in the US compared to Europe, but have not been studied extensively.

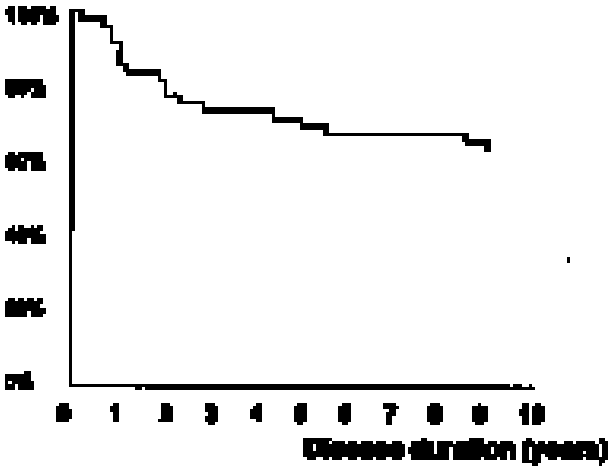

Fig. 1. The cumulative probability of permanent work disability in patients with early rheumatoid arthritis in a Finnish cohort of patients in the 1980s over 10 years (20).
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Economic burden of RA work disability

RA is a costly disease to the patient and to the community. Direct costs due to treatment comprise one-third of the costs of RA, while two-thirds come from indirect costs, mostly due to work disability. From the patient's perspective, work disability reduces income substantially, especially in the US (23, 31-35).

In northern Europe the costs of RA have been studied on the community level (36). In these countries, most of the costs of the disease are paid by the society, and much less by the patient. Indirect annual costs of $11,750 to $21,000 per person have been estimated (37, 38).

The role of disease modifying anti-rheumatic drugs (DMARDs) in preventing work disability

Severe outcomes of RA such as joint damage (39), functional losses (40), and premature mortality (41-43) have been shown to be favorably affected by early and active treatment. Therefore, one would expect that the most costly outcome of RA, namely work disability, might also be prevented now that potent treatments for RA are available. However, there is little evidence to date that early active treatment postpones work disability in RA. A preliminary analysis in Finland indicates that 20% of patients who were treated with a combination of methotrexate, sulfasalazine, hydroxychloroquine and prednisolone were work disabled at 5 years, compared to 29% of patients who were randomized to receive monotherapy with a single DMARD (44). Another report suggests that etanercept may postpone work disability (26).

As noted above, previous prospective studies of early RA indicate that work disability is already a major problem in the first 2-3 years of the disease. Furthermore, a certain proportion of patients are already work disabled when they first see a rheumatologist (19). It may be that the "window of opportunity" to prevent work disability in RA is lost during the first few months of the disease, and prevention of work disability should be started by reducing delays in seeing a rheumatologist (45).

How can the risk of work disability be reduced in early RA ?

Prolonged unemployment can lead to the development of an "unemployed mentality" (46), and the burden of the diagnosis of a chronic disease may lead to psychological distress. Consultation with a social worker, physical therapist, occupational therapist, or a psychologist may be of value in early RA in order to prevent work disability. Preliminary data in one study indicate that active therapy with DMARDs and multi-disciplinary team care may reduce permanent work disability rates in patients with early RA, as the number of patients with full-time sick-leave was reduced from 34% to 14% over a year, and only one of 111 patients retired (47).

In an era when little could be done to prevent the long-term consequences of RA, the rationale for early intervention was limited. However, at the present time when more powerful DMARDs are available to control disease activity and slow progression, early intervention in RA appears to be an urgent priority (45). Substantial delays are often seen in the diagnosis of RA in the community, as many physicians rely on rheumatoid factor, which is negative in 20-30% of patients throughout the disease course. Therefore, improvement of work disability outcomes in RA may depend as much on the education of physicians as on new DMARDs.

In summary, work disability is a major consequence of RA for the individual patient, her or his family, and society. Work disability results from a complex interplay of the medical disease, demographic variables such as age and occupation, and social conditions including the unemployment rate and government policies regarding the application for disability payments. Major improvement in work disability outcomes in RA appears to be a realistic possibility at this time, but may depend as much on physician and public education, and health policy issues, as on medical advances.

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