

# Is the long-term outcome of rheumatoid arthritis improving? Evidence from total joint replacement surgery



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'At present, evidence is increasing of the improved clinical status of RA patients compared with previous decades'.

The history of rheumatoid arthritis (RA) includes a long period from the 1950s through to the mid-1980s when RA was regarded, for the majority of patients, as a disease with a good prognosis [1]. The traditional teaching was that, in most patients, RA could be controlled with aspirin and later on with alternative nonsteroidal anti-inflammatory drugs. However, during the mid-1980s it was recognized that short-term drug efficacy did not translate into long-term effectiveness, as most patients experienced severe functional decline [2], radiographic progression [3], work disability [4] and premature mortality [2]. These reports led to calls for early and aggressive use of disease-modifying antirheumatic drugs (DMARDs) [5–7].

At present, evidence is increasing of the improved clinical status of RA patients compared with previous decades, according to disease activity [8,9], functional capacity [9–12], radiographic scores [9,13,14] and other clinical measures [9], including lower mortality rates in patients who responded to methotrexate [15,16] and lower work disability rates in patients who responded to DMARDs [17]. More recently, evidence is increasing of lower rates of total joint replacement (TJR) surgery in patients with RA.

TJR of the knee and hip is an important severe long-term outcome for patients with RA and accounts for a substantial component of the costs of this disease [18]. Wolfe and Zwiilich estimated that 25% of all patients with RA who were under observation between 1970 and through the 1990s required TJR surgery over two decades [19].

Overall rates of TJR surgery of the knee and hip in the entire population have doubled since 1990 and increased threefold since the early 1980s in many countries [20,21]. These findings indicate the increased need for TJR surgery associated with aging of the population, and apparently greater resources to perform these procedures.

Information concerning the rates of TJR surgery is available from a study in central Finland of the occurrence of primary TJR of the knee and hip in patients with RA and patients who did not have RA between 1986 and 2003 [22]. Over an 18-year period between 1986 and 2003, the age-standardized incidence-rate ratio of TJR in patients who did not have RA increased almost tenfold for the knee and twofold for the hip. By contrast, rates of hip and knee TJR were virtually unchanged over this period in patients with RA (Figure 1). These observations, obtained from the same total population, are consistent with other reports that are described below, indicating an increase in rates of knee and hip TJR surgery over the last two decades in the general population from many countries [20,21], with a concomitant decrease of TJR surgery in patients with RA [23–26].

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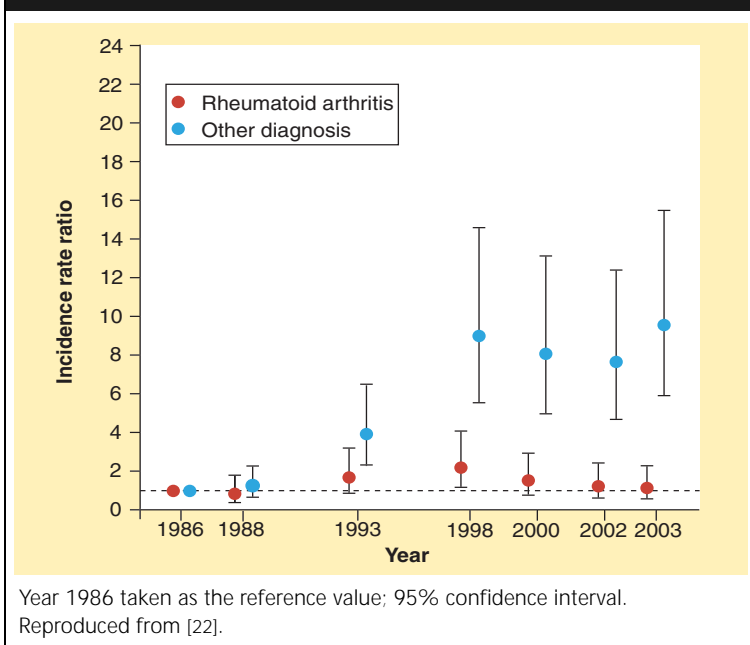
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In the Rochester Epidemiology Project, patients who were diagnosed with RA after 1985 were less likely to require TJR surgery compared with patients who had been diagnosed in earlier years [23]. A decrease in the rate of primary knee TJR in patients with RA was reported in the California state hospitalization database from 1983 to 2001 [24]. A decrease in both knee and hip TJR surgeries was seen in Sweden between 1987 and 2001 in patients with RA [25]. In Norway, a decrease in orthopedic surgery was observed among patients with inflammatory arthritis between 1994 and 2004 [26]. In a group of patients who were administered a tumor necrosis factor inhibitor, the annual rate of TJR surgery decreased from 22 to 10% [27].

The most plausible explanation for the decline in TJR surgery in patients with RA is that clinical status in these patients has improved from earlier decades, as is indicated

**Figure 1. Age-standardized incidence rate ratios for primary total joint replacement of the knee in females.**



in a number of reports [9–16,23–25]. Possible reasons for improved clinical status of patients with RA include patient selection towards milder cases seeking medical care and milder disease in general [14]. It is noteworthy that occurrence of TJR reflects the history of RA 5–20 years before the procedure, and in any case the era prior to wider use of tumor necrosis factor inhibitors. Most probably, an aggressive treatment strategy to treat patients with RA early with tight control toward remission, including early use of methotrexate [28], contributes to these observations.

The requirement for TJR surgery in patients with RA appears to be stable or even decreasing in many countries, reflecting improved long-term outcomes of RA. Future implications of these observations emphasize early and active therapies for patients with RA, including countries with high current levels of RA disease activity [29]. In the future, resources for TJR surgery of the knee and hip can be directed to osteoarthritis rather than RA.

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