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Literature review

Reconditioning in patients with rheumatoid arthritis

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Abstract

Rheumatologists traditionally have recommended to rheumatoid arthritis (RA) patients that they avoid dynamic and weight-bearing exercises because of concerns about aggravating joint inflammation and accelerating joint damage in such patients. These restrictions may lead to inadequate levels of physical activity and deconditioning.

Objective. – To review the literature on tolerance and benefits of conditioning training, including dynamic and weight-bearing activities in RA patients.

Materials and methods. – Medline and Cochrane databases were searched with the keywords RA, rehabilitation, physical therapy, exercise, reconditioning, and rest.

Results. – Rest therapy is more deleterious than beneficial in most patients with RA and may lead to deconditioning. Dynamic and aerobic exercises do not aggravate joint inflammation and do not accelerate joint damage in such patients. The important goal of reconditioning patients with RA is the prevention of functional decline. Conditioning programs designed to prevent widespread morbidities in healthy subjects are attainable by most RA patients, but an individualized approach to exercise is required.

Conclusion. – RA patients need to be persuaded about the effectiveness and safety of moderate and even high-intensity exercise.

Keywords: Rheumatoid arthritis; Rehabilitation; Physical therapy; Exercise; Reconditioning; Rest

1. Introduction

Rheumatoid arthritis (RA) is a systemic, chronic inflammatory rheumatism that leads to joint pain, deformity and destruction of joints. Patients with RA are at risk of decreased physical capacity and functional ability. Consequently, they have increased susceptibility for comorbidid conditions such as cardiovascular disease or osteoporosis [14,34,39].

Regular exercise is encouraged to prevent such widespread morbidities. For people with RA, aerobic rather than nonaerobic exercise appears to be more beneficial [24] and dynamic exercise, requiring muscle work during joint motion, superior to static or isometric exercise [7]. Nevertheless, rheumatologists traditionally have recommended that RA patients exercise restriction or that exercise programs be limited to nonweight-bearing isometric exercises and range-of-motion exercises because of concerns about aggravating joint inflammation and accelerating joint damage in such patients [16,23,33]. These restrictions in intensity, frequency and/or duration of exercise may lead to inadequate levels of physical activity and deconditioning [32].

Since 1985 [13], a large number of controlled and uncontrolled studies have been conducted to question whether patients with RA could benefit from regular physical exercise, including dynamic and weight-bearing exercises with moderate- to high-intensity exercise programs. The results are summarized in several reviews on exercise and RA [6,12,25,31,36,38]. The consensus of these reviews is that people with RA demonstrate improved aerobic fitness, muscle strength, joint mobility, functional ability, and mood with exercise, without detrimental effects on disease. Consequently, the American College of Rheumatology (ACR) recommended regular participation in dynamic exercise programs in its recent update of treatment guidelines for RA [8]. We aimed to review the litera-

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ture on reconditioning in RA patients to answer specific questions related to the topic.

2. Methods

2.1. Questions

The issue of reconditioning in RA patients prompted us to formulate several questions:

- Is rest therapy deleterious or beneficial?
- Do dynamic and aerobic exercises increase joint inflammation?
- Do dynamic and aerobic exercises accelerate joint damage?
- What are the goals of reconditioning?

Are conditioning programs designed to prevent widespread morbidities, in particular cardiovascular disease, attainable by patients with RA?

2.2. Literature review strategy

We searched the Medline and Cochrane databases using the keywords RA, rehabilitation, physical therapy, exercise, reconditioning, and rest. Publications written in English or French selected for the review were meta-analyses, reviews (systematic or not), results of randomized controlled trials, or results of randomized uncontrolled trials. We also conducted a manual search of the references listed in each publication.

2.3. Patients

Only reports on adult patients with RA defined by the ACR criteria were selected.

3. Results

3.1. Rest therapy is more deleterious than beneficial in most patients

On the basis of the simplistic hypothesis that the pressure and frictional stress produced by exercise contributes to joint destruction in RA [15], bed rest and/or reduction of the exercise load have usually been recommended for patients with RA. However, in a controlled clinical trial, the benefit of bed rest was less than expected, and the positive response to rest was confined to patients with the most active disease [1]. Likewise, a substantial reduction in intensity, frequency and/or duration of exercise may lead to deconditioning [32], which is deleterious. Not exercising enough could cause a downward spiral in the condition of the patient: inactivity causes isolation, which produces anxiety and depression, which increases pain levels, leading to more inactivity. Thus, empowering RA patients through exercise could disrupt this spiral.

Rest therapy proposed for numerous rheumatic diseases is currently questionable [2], and the reinterpretation of pain by use of vigorous exercise despite pain has been used successfully for patients with chronic pain. Such a reconditioning program could be beneficial for RA patients, although exercise-induced pain might be an indicator of an active disease process.

3.2. Dynamic and aerobic exercises do not aggravate joint inflammation

Numerous clinical trials of exercise concluded that moderate- to high-intensity exercises, including dynamic exercises and weight-bearing aerobic activities, do not negatively affect the disease process in people with relatively stable RA. Three studies on this topic are particularly interesting [6]. de Jong et al. [3] compared the effectiveness and safety of a 2-year intensive weight-bearing exercise program in a randomized controlled trial. Three hundred patients with stable disease were enrolled. Subjects allocated to the intensive exercise program exercised in groups twice a week for 75 min per session using the Rheumatoid Arthritis Patients in Training program (RAPIT program). Subjects allocated to the usual care group received physical therapy if thought necessary by the attending physician. In both groups, disease activity, as measured by the Disease Activity Score (DAS), decreased, with no differences between the two groups.

Häkkinen et al. [11] designed a randomized controlled trial comparing the long-term effects of a 2-year home-based strength-training program with conventional training in patients with early RA. The program consisted of dynamic strength-training exercises for the limbs and trunk to be performed twice a week for 45 min. In addition, subjects were encouraged to participate in recreational sports activities two to three times a week. The conventional training program consisted of stretching exercises performed twice a week. Compared with the baseline DAS, disease activity decreased in both groups, with even a significant difference between the two groups in favor of the strength-training group. After 5 years, both groups exhibited decreased disease activity [10]. Van den Ende et al. [37] examined the effects of intensive exercise in patients with active RA. In this randomized controlled trial, patients were allocated to an intensive exercise program consisting of supervised isokinetic and isometric strength-training and bicycling on a home trainer for 15 min, three times a week, plus conservative exercises consisting of stretching and isometric exercises. Control patients received conservative exercises only. The improvement of disease activity, as measured by the DAS, over the 24-week follow-up period was similar in both groups.

3.3. Dynamic and aerobic exercises do not accelerate joint damage

A few well-designed studies assessed the long-term effects of high-intensity exercises on joint damage as seen on radiography in patients with RA. None showed an increase in the rate of damage following dynamic exercise programs.