INTRODUCTION

Patellofemoral pain is a frequent source of impairment. The basic etiology and pathogenesis are still unknown. Many predisposing factors have been proposed, including acute trauma, overuse, immobilization, overweight, genetic predisposition, malalignment of the knee extensor mechanism, congenital anomalies of the patella, prolonged synovitis, recurrent hemorrhage into a joint. In many cases, however, there are no obvious factors behind the syndrome. Once it has begun, patellofemoral pain syndrome frequently becomes chronic, and the pain forces the patient to stop all activities. The knee pain is most often related to athletic activity and can be controlled by reducing or diminishing the intensity of sports participation.

In patellofemoral disorders, two main problems are pain and instability of the knee. Pain in the anterior region of the knee has an inhibitory effect on quadriceps muscle contraction particularly if it is accompanied by knee joint effusion. Consequently, extreme care should be taken not to exacerbate the pain with exercise because muscle inhibition and subsequent atrophy will occur. In the rehabilitation program, thus, pain relief must be very important factor for maintaining extensor mechanism of the knee. The purpose of our study was to compare the effectiveness of TENS (Transcutaneous Electrical Nerve Stimulation) and DD (Diadinamic current) on pain relief for patellofemoral pain syndrome.

METHODS

Between May 1994 and February 1997, 30 patients with patellofemoral pain syndrome included in this study. The patients who had knee pain bilaterally were evaluated separately. Prior to the treatment, the patients were randomly assigned to one of two groups. All the patients in both groups were evaluated for pain, knee functions, activity levels and clinical signs. Both groups were undertaken to the same rehabilitation program, except analgesic modalities. They were treated with heat, ultrasound, faradic stimulation of vastus medialis and exercise. Each group followed the exercise program, which included isometric exercise, closed kinetic chain exercise and stretching exercise. Adding to this program, TENS group (n=16), had 30 minutes of TENS application for pain relief, while DD group (n=14) were treated with DD current as analgesic therapy. They went on the treatment for 6 weeks and were followed at least 12 weeks.

RESULTS

All patients were evaluated in their own groups and also compared with each other. Results showed that there was a significant improvement in all parameters (p<0.05) when they were evaluated in their own groups. Although there was no significant difference between the groups in pain relief (p>0.05), pain scores were found to be lower in the DD current therapy group than the TENS group. There were also no differences in knee functions, level of activity and clinical signs between the groups (p>0.05).
DISCUSSION
We concluded that each analgesic modalities - TENS or DD current - can be used for pain relief in the rehabilitation program of the patellofemoral pain syndrome depending upon clinical experience and preference of physical therapist, and prognosis of patients clinical signs. DD current therapy, however seems to be more effective than TENS in reducing pain for patellofemoral pain syndrome, but requires further research.

REFERENCES