

Effect Of Compliant Physiotherapy Post Anterior Cruciate Ligament Reconstruction Rehabilitation

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Abstract

When it comes to sports-related injuries, the anterior cruciate ligament (ACL) rupture has grown increasingly common. This injury is becoming more common as more individuals take part in sports; in the United States, the number of instances has recently risen from 100,000 to 200,000, demonstrating an upward trend. Study subjects who had regular physiotherapy following ACL surgery had better outcomes than those who received it infrequently, according to a new study. Subjects who had less physiotherapy had fewer symptoms and a better overall outcome after 12 months, according to the findings of this study. There was no statistically significant difference between the groups in the Cincinnati functional component score. IKDC (International Knee Documentation Committee) evaluations did not differ statistically between the groups either. Both groups were able to return to playing sports at the same level they had before their injuries. Results also suggest that the minimal physiotherapy group had a tendency to have higher Cincinnati knee ratings than the group that did not get any physiotherapy. According to this study, some subjects who attend physiotherapy a few times a week following ACL surgery should expect to see good outcomes after 12 months. Because of this, a randomised controlled trial is still needed to determine whether or not physiotherapy benefits those who have had their ACLs replaced. Subjects who read the findings of this study may be more inclined to participate in a similar investigation in the future.

Keywords: physiotherapy, rehabilitation, anterior cruciate ligament injury.

INTRODUCTION:

In recent years, the anterior cruciate ligament (ACL) rupture has become a highly common injury, with the majority of cases occurring during athletic activities. The incidence of this injury is increasing as subjects participate in more sporting activities; in the United States, the incidence has lately increased from 100,000 to 200,000 cases per year, indicating a rising trend. There are three stages in the healing process of this injury during which physiotherapy is extremely beneficial. Prior to the injury and the methods we are implementing in an effort to

avoid an ACL injury are covered in the first stage of the process. The second stage occurs after the injury has occurred, and it is at this point that we determine whether the patient should undergo surgical or non-operative treatment. The third stage consists of the post-operative rehabilitation programme following ACL restoration surgery. In all of these stages, the physiotherapist plays the most important role in the patient's rehabilitation.

AIMS & OBJECTIVE:

To see if there was a difference in outcome between a group of subjects who received

regular physiotherapy after ACL surgery and a group who received it only seldom.

MATERIALS & METHODS:

Six subjects who had ACL surgery and are regular at physiotherapy appointments were matched with six subjects who had non-compliance with physiotherapy for the first six months after the surgery. They were all the same age, gender, sex, graft type, activity level, and job before the surgery. At 12 months, the Cincinnati knee grading system and the IKDC form were used to look at how things were going for subjects.

RESULTS & DISCUSSION:

Age, sexuality, graft type, quantity of sports participation, and occupational rating before to

injury all had no statistically significant differences between the two physiotherapy groups (table 1). This shows that the two groups in this study were well-matched. Individuals in the minimal therapy group had a median of two physiotherapy appointments in the six months following surgery, whereas participants in the conventional therapy group had a median of 23 physiotherapy visits in the same period. There were no postoperative complications that required specialised or extended PT therapy for any of the subjects. All six subjects in the minimum physiotherapy group decided to quit regular physiotherapy appointments on their own. Three participants did not believe physiotherapy was necessary, two went to a chiropractor, and two could not defend their decision.

Table 1: Study population characteristics

	Seldom compliance with physiotherapy	Regular compliance to physiotherapy
Age (years), mean (SD)	27.9 (4.4)	28.2 (4.9)
Male/female	3:3	4:2
Time from injury to surgery (weeks) Mean (SD)	21.3 (29)	17.9 (16)

Table 2: 12 months after anterior cruciate ligament repair, Cincinnati knee scores and IKDC ratings

	Seldom compliance with physiotherapy	Regular compliance to physiotherapy
Overall Cincinnati (0-100)	93.6 (5.1)	86.8 (5.0)
Cincinnati symptoms (0-50)	45.5 (2.6)	42.3 (3.1)
Overall IKDC (no of patient)		
A	1	0
B	4	3
C	1	1
D	0	2
IKDC 1 (subjective assessment)		
A		
B	1	0
C	4	6
D	1	0
	0	0

IKDC 2 (Symptoms)		
A	4	1
B	1	3
C	1	1
D	0	1
IKDC 3 (range of motion)		
A	5	4
B	1	1
C	0	1
D	0	0
IKDC 4 (ligament examination)		
A		
B	5	4
C	1	2
D	0	0
	0	0

*P <0.05

After a year of involvement, individuals' Cincinnati knee scores and IKDC ratings are shown in Table 2. As a group, individuals who got moderate physical treatment were found to have a significantly higher symptom component of the Cincinnati Scale ($p = 0.04$) than those who had no physical therapy at all. Subjects who had less physiotherapy had fewer symptoms and a better overall outcome after 12 months, according to the findings of this study. There was no statistically significant difference between the groups in the Cincinnati functional component score. IKDC evaluations did not differ statistically between the groups either.

ROLE OF POST-OPERATIVE REHABILITATION:

It is the primary goal of physiotherapy following an ACL reconstruction that an athlete can resume their pre-injury activity levels by the sixth month after their injury. Despite the fact that the operation restores the stability of the knee joint, the physiotherapist must deal with a slew of issues throughout this time period as well. It is necessary to handle the discomfort and edoema that occur immediately after the operation. It is necessary to restore the range of motion of the knee joint, as well as muscular strength and proprioception, in order to prevent further damage. Cardiovascular fitness and endurance levels are also vital, and they must be

maintained at high levels throughout one's life. Additionally, the patient must conquer his or her kinesiophobia before engaging in athletic activities again. A large number of rehabilitation regimens have been established in order to attain this objective. The primary goal of all of them is to reach the highest possible level of strengthening and loading as soon as possible without causing a re-injury to the ACL.

Subjects in the minimal and frequent PT groups had no discomfort or difficulties with their knees 12 months after having their ACLs replaced. High Cincinnati and IKDC scores proved that. Both groups might play sports at the same level as before. A similar trend was seen in the limited physiotherapy group, which had greater Cincinnati knee symptom scores and a tendency to have higher overall Cincinnati knee scores.

CONCLUSION:

According to this study, some individuals who opt to attend to physiotherapy merely a few times a week can have decent results 12 months after undergoing ACL surgery. This demonstrates the necessity for a randomized controlled trial to determine how physiotherapy benefits persons who have had their ACLs replaced. The findings of this study may persuade subjects to participate in a similar study in the future.

ABBREVIATIONS:

IKDC - International Knee Documentation Committee

ACL - Anterior cruciate ligament

REFERENCES:

1. Delay BS, Smolinski RJ, Wind WM, et al. Current practices and opinions in ACL reconstruction and rehabilitation: results of a survey of the American Orthopaedic Society for Sports Medicine. *Am J Knee Surg* 2001;14:85–91.
2. Feller J, Cooper R, Webster K. Current Australian trends in rehabilitation following anterior cruciate ligament reconstruction. *The Knee* 2002;9:121–6.
3. Derscheid G, Feiring D. A statistical analysis to characterize treatment adherence of the 18 most common diagnoses at a sports medicine clinic. *J Orthop Sports Phys Ther* 1987;9:40–6.
4. Schenck RC Jr, Blaschak MJ, Lance ED, et al. A prospective outcome study of rehabilitation programs and anterior cruciate ligament reconstruction. *Arthroscopy* 1997;13:285–90.
5. Fischer DA, Tewes DP, Boyd JL, et al. Home based rehabilitation for anterior cruciate ligament reconstruction. *Clin Orthop* 1998;347:194–9.
6. Noyes FR, Mooar PA, Matthews DS, et al. The symptomatic anterior cruciate deficient knee. Part I: the long-term functional disability in athletically active individuals. *J Bone Joint Surg [Am]* 1983;65:154–62.
7. Hefti F, Muller W, Jakob RP, et al. Evaluation of knee ligament injuries with the IKDC form. *Knee Surg Sports Traumatol Arthrosc* 1993;1:226–34.
8. Irrgang JJ, Ho H, Harner CD, et al. Use of the International Knee Documentation Committee guidelines to assess outcome following anterior cruciate ligament reconstruction. *Knee Surg Sports Traumatol Arthrosc* 1998;6:107–14.
9. Frobell R.B., Lohmander L.S., Roos H.P. Acute rotational trauma to the knee: poor agreement between clinical assessment and magnetic resonance imaging findings. *Scand J Med Sci Sports*. 2007;17(2):109–114.
10. Bachmann L.M., Haberzeth S., Steurer J., ter Riet G. The accuracy of the Ottawa knee rule to rule out knee fractures: a systematic review. *Ann Intern Med*. 2004;140(2):121–124.
11. Stiell I.G., Greenberg G.H., Wells G.A., McKnight R.D., Cwinn A.A., Cacciotti T. Derivation of a decision rule for the use of radiography in acute knee injuries. *Ann Emerg Med*. 1995;26(4):405–413.