



Original Article

Anterior cruciate ligament and meniscal injuries in sports: incidence, time of practice until injury, and limitations caused after trauma[☆]

Diego Costa Astur^{*}, Marcos Xerez, João Rozas, Pedro Vargas Debieux, Carlos Eduardo Franciozi, Moises Cohen

Universidade Federal de São Paulo (UNIFESP), São Paulo, SP, Brazil

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ABSTRACT

Objective: To analyze the incidence of ACL and meniscal injuries in a population of recreational and elite athletes from Brazil and the relation of these injuries with their sports activities.

Methods: This was a prospective observational study of 240 patients with ACL and/or meniscal injuries submitted to surgical treatment. Data of patients and sport modality, as well as Tegner score were registered in the first clinical evaluation. The patients were divided into three groups: (1) isolated rupture of the ACL; (2) ACL injury associated with meniscal injury; (3) isolated menisci injury.

Results: The majority of the patients belonged to group 1 (44.58%), followed by group 2 (30.2%) and 3 (25%). Most patients were soccer players. The mean time from sport practice to injury in group 1 was 17.81 years. In group 2, it was 17.3 years, and in group 3, 26.91 years. Soccer athletes presented ACL injury in 0.523/1000 h of practice and meniscal injury in 0.448/1000 h of practice. Before the injury, the mean Tegner score obtained for groups 1, 2, and 3 were 7.18, 7.34, and 6.53, respectively. After knee injury, those values were 3.07, 3.18, and 2.87, respectively.

Conclusion: Soccer was the sport that caused the majority of lesions, regardless the group. Furthermore, patients from groups 1 and 2 had less time of practice prior to the injury (17.81 and 17.3 years) than the patients of group 3 (26.91 years). Women presented a higher risk to develop ACL and meniscal injuries in 1000 h of game/practice. Running, volleyball, and weightlifting are in ascending order of risk for ACL and/or meniscal injury. Regarding the return to sport practice, the efficiency of all athletes was impaired because of the injury.

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[☆] Study conducted at the Centro de Traumatologia do Esporte, Departamento de Ortopedia e Traumatologia, Universidade Federal de São Paulo (UNIFESP), São Paulo, SP, Brazil.

^{*} Corresponding author.

E-mail: mcastur@yahoo.com (D.C. Astur).

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Lesões do ligamento cruzado anterior e do menisco no esporte: incidência, tempo de prática até a lesão e limitações causadas pelo trauma

RESUMO

Palavras-chave:

Ligamento cruzado anterior

Menisco

Medicina esportiva

Futebol/lesão

Objetivo: Avaliar a incidência de lesões do LCA e do menisco em uma população de atletas amadores e de elite no Brasil, bem como a relação dessas lesões com a atividade esportiva. **Métodos:** Este foi um estudo prospectivo e observacional de 240 pacientes com lesões meniscais e/ou do LCA. Os dados dos pacientes e da modalidade esportiva, bem como o escore de Tegner, foram aferidos na primeira avaliação clínica. Os pacientes foram divididos em três grupos: 1) ruptura isolada do LCA; 2) lesão do LCA associada à lesão meniscal; 3) lesão meniscal isolada.

Resultados: A maioria dos pacientes pertencia ao grupo 1 (44,58%), seguido pelo grupo 2 (30,2%) e pelo grupo 3 (25%). A maior parte dos pacientes praticava futebol. O intervalo médio entre prática do esporte e lesão no grupo 1 foi de 17,81 anos. No grupo 2, esse intervalo foi de 17,3 anos e, no grupo 3, de 26,91 anos. Jogadores de futebol apresentaram lesão do LCA em 0,523/1.000 horas de prática e lesão meniscal em 0,448/1.000 horas de prática. Antes da lesão, o escore de Tegner médio obtido pelos grupos 1, 2 e 3 foi 7,18, 7,34 e 6,53, respectivamente. Depois da lesão do joelho, esses valores passaram a ser 3,07, 3,18 e 2,87, respectivamente.

Conclusão: O futebol foi o esporte que causou a maior parte das lesões, independentemente do grupo. Adicionalmente, pacientes dos grupos 1 e 2 tiveram menos tempo de prática do esporte antes da lesão (17,81 e 17,3 anos) do que os pacientes do grupo 3 (26,91 anos). As mulheres apresentaram um risco maior de desenvolver lesões meniscais ou do LCA em 1.000 horas de prática. Corrida, voleibol e halterofilismo estão em ordem crescente de risco para lesões do LCA ou do menisco. Quanto ao retorno à prática desportiva, a eficiência de todos os atletas foi afetada negativamente pela lesão.

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Introduction

Orthopedic injuries affecting the knee are common and often result in withdrawal of the athlete from training and competitions.¹⁻³ Injuries to the anterior cruciate ligament (ACL) are common in sports in which the knee performs rotation as in soccer, basketball, and skiing,⁴ totaling more than 250,000 cases per year.⁵⁻⁸

In the USA, the most common intra-articular lesion of the knee occurs in the meniscus,^{9,10} being the most frequent surgical indication among the orthopedic procedures.^{9,11} The menisci play an important role in knee homeostasis, load transmission, shock absorption, lubrication, joint stability and proprioception. Injuries in the menisci can cause pain, disability, as well as accelerate the progression of osteoarthritis of the knee.¹²

The sport can favor the type of athlete's knee injury. Some sports have a higher prevalence of ACL injuries and others have prevalence of meniscal injuries. Few studies correlate ligament and meniscus injury to the sport practiced.¹¹⁻¹⁴

The aim of the study was to evaluate the prevalence of ACL and meniscal injury in a population of amateur and professional athletes in Brazil, as well as the relationship of these lesions with the sport practiced and characteristics of the athletes.

Material and methods

This is a prospective observational study, conveyed and duly approved by the Research and Ethics Committee of our institution, which is consistent with the required standards. Patients included in the study signed a free and informed consent.

240 patients with ligament and meniscus injuries in the knee triggered by sporting practices were selected, which were evaluated and followed up individually. Data of the patient and related to sports practice were recorded in the first clinical evaluation. In addition, the Tegner questionnaire was applied to assess the impact of the injury in sporting practices between 2011 and 2014. Patients were divided into Group 1: isolated ACL injury; Group 2: ACL injury associated with meniscal injury; and Group 3: isolated meniscal injuries.

Inclusion criteria were: ACL injury alone or associated with meniscal injury or isolated meniscal injuries; skeletal maturity (>18 years); no signs of osteoarthritis. The criteria for non-inclusion were: presence of other musculoskeletal injuries; option for meniscal suturing; systemic diseases or associated syndromes.

The patients were evaluated and treated as indicated by medical staff: ACL reconstruction using tendons from gracilis and semitendinosus muscles and partial meniscectomy of the medial or lateral meniscus, in accordance with the diagnosis of the injury. Rehabilitation was performed according to

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