207 - INJURIES OF THE ARTICULATION OF KNEE OCURRED IN THE PRACTICE OF RECREATIONAL SOCCER IN SANTAREM IN THE PARA STATE

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INTRODUCTION

The articulation of the knee is extremely complex, being easy to occur a injury during daily practices, physical activities, in industrial or ergonomics accidents and, mainly, in collisions. The high number of incidences of the injuries of the articulation of the knee happens because of several reasons and, among them, the lack of a adequate preparation to those practices. The practicer of recreational soccer turns this practice into a escaping valve, but the practicers are subjected to uncontrollable situations such as injury in the knee which can separate them of a life's quality and social atmosphere (BARROSO, 2004).

To Gardner (1990), responsible for the walking, this complex articulation is highly required, because the knee is responsible to support all corporal weight and promoting the stability and balance to the individual.

To Silva (2002), the muscles work together to keep both their static and dynamic, because the central nervous system does not answer the work from just one isolate muscle or in just one plan, instead this it answers to tridimensional one. So, any postural alteration will cause the retraction of its postural muscles chains and vice versa, besides, any aggression in these chains will cause a alteration of the bony alignment.

The knee is the intermediate articulation of inferior limb, it has the most important role in the human locomotion (SILVA, 2006). In the soccer, the knee, because of its condition of articulation highly solicited and exposed to traumas and frequently injured (STEWIEN, 2005). In spite of the thigh to be the zone with most injury's occurrence, the injury of knee is the most common among serious injuries of soccer practicers (HÂGGLUND M, WALDÉN M, BAHR R, EKSTRAND J.)

In global terms, the injury of knee does not represent the most indexes of occurrences; instead it is common among soccer practicers (HÂGGLUND M, WALDÉN M, BAHR R, EKSTRAND J.). It is estimated that these injuries are responsible from 50% to 60% of sportive injuries in Europe, and from 3,5 to 10% of physical traumas treated in European hospitals are caused by soccer. Inklaar (1994) affirmed adult athletes demonstrate a higher number of injuries than young athletes. The injuries occurrence increase with the age. Lameira (1999) asseverates that the epistemological studies are the initial steps to elaborate a preventive program. Therefore the objective of this study is to do a survey of injuries occurred through the practice of recreational soccer in Santarem and to correlate them with the time of practice.

The soccer performance structure has specific characteristics such as: large pitch that requires a high physical capacity, mainly in sprints; the fact of playing with feet that requires high technical and tactic capacity; the player use four different variation of running: slow running, sub-maximum velocity, maximum velocity and back running; and the high level of psychic stability of the players in function of the low number of the quantitative success (goals) scored during a game (FERNANDES, 1994).

The modern soccer requires many physical qualities that seem to independents of the soccer position. Capacity of quick acceleration, sprint, good ability of leaping; muscle explosive strength of inferior limbs; resistance of velocity are constant exigencies to the athletes (SILVA, 2001).

The soccer is one of the most popular sports all over the world (HOY,TERKELSEN & HELLELAND, 1992; INLIAAR, 1994), with practicers in all age groups and in different levels (SCHMIDT-OLSEN, JORGENSEN, KAALUND & SORENSEN 1991). Noyes and Buncher (1987) affirm soccer is responsible for the most indexes of sportive injuries in the world. The incidence of injuries and its risk factors in adult practicers of soccer are objective of diverse studies (CHOMIAK, JUNGE, PETERSON & DVORAK, 2000; EKSTRAND & KARLSSON, 2003; HOY et al, 1992; JUNGE, CHOMIAK & DVORAK, 2000, JUNGE & DVORAK, 2000; LADEIRA, 1999; NILSEN & YDE, 1989; RIBEIRO & OSTA, 2006; WALDÉN, HAGGLUNG & EKSTRAND, 2004), but few works have investigated the injuries in amateur practicers.

PROCEDURE'S METHOD

This is a retrospective, descriptive and correlating research, to carry out this work, it was used the non parametric test qui-square, it was observed the level of significance $p < 0,05$ to critic analysis of the hypotheses whose objective is to do a survey of the prevalence of the injuries occurred through the practice of recreational soccer in Santarem in the Para state and to correlate them with the time of practice in this modality.

1.Sample

The sample was randomly selected. Thirty (30) soccer practicers participate in the study, their ages were between 20 and 45years old. The soccer practicers were male and all of them had gotten injuries through the practice of soccer in the period from January 1st of 2006 to December 30th of 2008 and they were attended in the orthopedic clinic of Santarem. They did the exam called magnetic resonance to prove the injury in the articulation of the knee. The criterions of exclusion and inclusion were: for the former, not to be the determined age, not to be exam of proving as well as their injury has not being acquired by the practice of soccer, not to be male, to have a injury that have occurred before the stipulated period; for the latter, being male, to have had their injury through the practice of soccer, having the corrobative exam and to have being randomly selected.

2.Delineation of the study

The practices were informed about the study by a conversation, after their acceptation, it was carried out anamnesis and application of questionary in which it was verified the age, the sex, how and where was the injury and posteriorly the signature of the consent term, the practicers delivered the corrobative exams of injury.

3.Analysis of the data

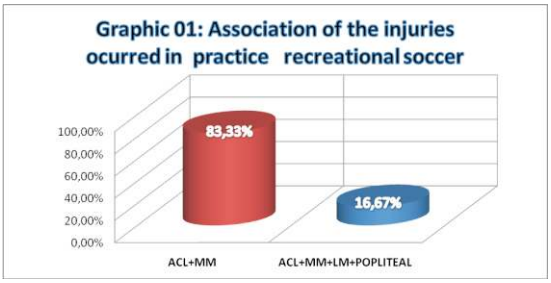
It was used the descriptive and correlating statistics to reach the obtained conclusion in this research. The descriptive statistics analyzed the average and the standard deviation of the age of the participants, the percent of the prevalence of the injuries. The inferential statistics correlated the time of sportive practice with the incidence of injuries, through the test called qui-square of Peterson to reach the conclusions.

RESULTS AND DISCUSSIONS

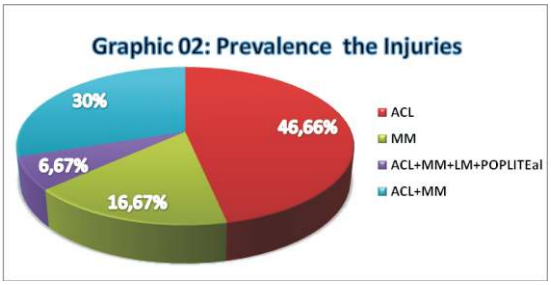
The average of age was 35,3 years old and its standard deviation was 3,0. This study corroborated to reaffirm that the more higher age, the more the incidence of injury, ratifying the study of Inklaar (1994), who affirmed adult athletes demonstrate a

higher number of injuries than young ones.

The main prevalence of the injuries occurred through the practice of recreational soccer were: injury the anterior cruciate ligament with about 83,33% associated to the injury of medial meniscus, 16.67% the association of all other injuries, in conformity to graphic 01.



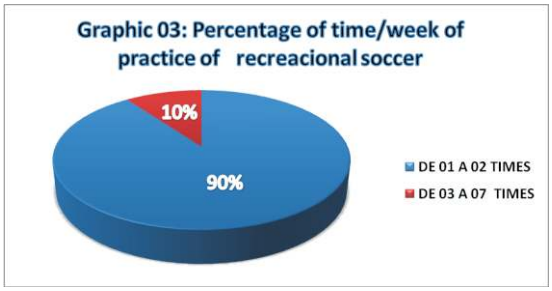
Analyzing the prevalence of the isolated injuries, it was characterized in this study the following form, the main injuries is the one of ACL with about 46,66% of the injuries and the medial meniscus 16,67.%, already association of the injuries of more ACL the medial meniscus characterized 30% and in relationship the other injuries associated with about 6,67%, according to the demonstrative of the graph 02. It was characterized in this study that the injuries in the articulation of the knee never appears totally isolated, but her association is described in several scientific literatures, and some goods the association appears in an inverse way as in the study of Barroso (2004).



According to the study of Barroso (2004) diverges in the meaning of the kinds of injuries of the articulation of the knee through the practice of soccer, in this work the most prevalence are in the medial meniscus and posteriorly ACL. Piasecki et al (2003), ratifies the study of Barroso comparing the kind and the injury mechanisms among professional athletes male and female and amateur, obtaining as result the injury of medial meniscus as first injury, but another researcher called Chomiak et al (2000), studied about the kinds of injuries, the obtained data are seemed like the data of this work, having as main injury the injury of anterior cruciate ligament followed by the medial meniscus. Abdalla and Cohen (2003), in their turn, demonstrate the injury of anterior cruciate ligament as the most frequent and this injury is frequently associated to injuries of meniscus (80% to 90%), compared to Abdalla and Cohen's study, the association also seems like this work, having a good index of relation.

Several studies have demonstrated significant differences in injuries registered in soccer (INKLAAR, 1994; JUNGE & DVORAK, 2000; KELLER NOYES & BUNCHER, 1987; NOYES, LINDENFELD & MARSHAL, 1988; VAN MECHELEN, HLOBIL & KEMPER, 1992). Junge and Dvorak (2000) attribute these differences to conceptual contradiction, method of data collection, time of observation, design and kind of type of study and characteristics of samples found in the works. The definition of injury and its gravity are important aspects in the register of sportive injuries, and they have been discussed by several authors (INKLAAR, 1994; JUNGE & DVORAK, 2000; KELLER NOYES & BUNCHER, 1987; NOYES, LINDENFELD & MARSHAL, 1988; VAN MECHELEN, HLOBIL & KEMPER, 1992). Junge and Dvorak (2000) affirm that the definition of injury could be based in prevalence of appropriated complaint to soccer and the gravity is not determined by duration of symptoms only, but also by the damage of tissue, because little injuries and injuries “cured” by analgesia or medicine are neglected, and the rate of incidence of injuries can be underestimated. In this study and in diverse studies presented by others authors such as Anderson & Lipscomb (1986), Rose & Gold, a accuracy about 76% to 90% to ACL and medial meniscus, having in the exam of magnetic resonance the fidelity of incidence of the proved injuries. Currently, the MR is an efficient exam in the evaluation of affections of this level: for being quick, non-invasive, painless (ROSE & GOLD, 1996; MANDELBAUM, FINERMAN, 1986; CRUES, MINK, LEVY, 1987; MOON GENANT & HELMS, 1983 apud YOUSEF, 1999).

Concerning the age, it was observed that about 90% of the practice once or twice per week, and 10% practice more than twice per week, these observations have clear visualization in the graphic 03.



About this theme is scarce in the Brazilian literature yet, so the collected data of this work contribute to the exploration of this theme. The correlation between time of practice and the injuries was characterized as high level of significance $p < 0,0001$, this data can be seen clearly in the chart 01:

Chart 01: The correlation between the incidenc e of injuries and the number of times of the practice of recreational soccer per week.

Kind of injuries	Times/week. From 01 to 02 times	From 03 to 07 times	Total	Rate of Prevalence Practice	X^2	P
GENERAL	90%	10%	30	90%	19,2	<0,0001
SPECÍFIC						
ACL	88%	12%	25	88%	14,4	0,0001
MM	94%	6%	16	94%	12,25	0,0005
LM		0	02		-	-
POPLITEAL		0	02		-	-

In conformity to Peterson et al (2000) this prevalence can be explicated by technique deficiency as well as possible diminution of muscle strength, resistance, coordination. This work adds that the lack of a systematic work of physical activities can contribute to the increasing of incidences of injuries through the practice of recreational soccer.

CONCLUSION

The main prevalence of the injuries occurred through the practice of recreational soccer were: injury the anterior cruciate ligament with about 83,33% of occurred injuries are of anterior cruciate ligament, medial meniscus, 16,67 of the injuries associations. It was verifies that the less time of practice of systematic physical activity, the more incidence of injuries of the articulation of the knee there will be in practicers of recreational soccer. Several studies have demonstrated significant differences in injuries registered in soccer (INKLAAR, 1994; JUNGE & DVORAK, 2000; KELLER NOYES & BUNCHER, 1987; NOYES, LINDENFELD & MARSHAL, 1988; VAN MECHELEN, HLOBIL & KEMPER, 1992). Junge and Dvorak (2000) attribute these differences to conceptual contradiction, method of data collection, time of observation, design and kind of study and characteristics of samples found in the works. With regard to relation between the time of practice and the increasing of the injuries in amateur sports, the literature is scarce. It is hoped that future researches can be developed in this sense, contributing with the quality of life of the population.

BIBLIOGRAPHICAL REFERENCES

BARROSO, A, J, L, **Lesões no joelho provocadas por ações corporais no futebol de campo em "atletas de fim de semana" – Dissertação de Mestrado em Motricidade**, 08, 26, 28, 2004.

BUSQUET, Léopold. As cadeias musculares - volume 2, Lordoses - Cifoses - Escolioses e Deformações Torácicas. 1ª Edição. **Edições Busquet,** Belo Horizonte, 2001. 191 p.

CHOMIAK,J.;JUNGE, A.; PETERSON, DVORAK, J. Severe injuries in football players. **The Americam Journal Sports Medicine,** Walthan, v.28,n.5,p.58-68,2000.

COHEM, M. & ABDALLA, R. J. **Lesõse nos Esportes:Rio de Janeiro:** Editora Revinter, 2003. 937 p.

CHOMIAK, J. et al. Severe injuries in football players. Influencing factors. Disponível em **http://www.ncbi.nlm.nih.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=11032109&dopt=abstract** Acesso em 28 de Setembro 2009

DENYS-STRUYF, Godelieve. **Cadeias musculares e articulares: o método G.D.S. São Paulo, Editora Summus,** 1995. 133 p.

FERNANDES, José Luiz. **Futebol: Ciência, Arte ou Sorte. São Paulo/SP. Editora Pedagógica e Universitária** - EPU. 1994.

GOULD III, James A. **Fisioterapia na ortopedia e na medicina do Esporte.** São Paulo/SP. Editora Manole. 1993.

HÂGGLUND M, WALDÉN M, BAHR R, EKSTRAND J**. Methods for epidemiological study of injuries to professional football players: developing the UEFA model.** BR J Sports Med. 2005;39(6):340-6.

HOY, K.; LINDBD, B.E.; TERKELSEN, C.J.; HELLELAND, H.E. European soccer injuries: a prospective epidemiologicand socioeconomic study. **The American Journal Sports Medicine,** Walthan, v.20, n.3, p.318-22, 1992.

INKLAAR H.: Soccer injuries: incidence and severity. **Sports Med 1**8: 55-73, 1994.

JUNGE, A.; DVORAK, J. Influence of definition and data collection on the incidence of injuries in football. The American **Journal Sports Medicine, Walthan,** v.28, p.40-6, 2000.

JUNGE, A.;DVORAK, J.; GRAFF-BAUMANN, T.; PETERSON, L. Football injuries FIFA tournaments and the Olympic Games , 1999-2001: development and implementation of an injury-reporting system. **The American Journal Sports Medicine, Walthan,** v32, n.1,p.80-9,2004.

KELLER ,C.S.; NOYES, F.R.; BUNCHER, C.R. The medical aspects of soccer injury epidemiology. The American **Journal Sports Medicine ,** Walthan, v 15,n.3,p.105-12,1987.

KIBLER, W.B. Injuries in adolescent and preadolescent soccer players. **Medicine & Science in Sports & Exercise, Madison,** v.25, n.12, p.1330-32, 1993.

LADEIRA, C.E. Incidências de lesões no futebol: um estudo prospectivo com jogadores masculinos adultos amadores canadenses. **Revista Brasileira de Fisioterapia** , São Paulo , v.4, n. 1,p. 39-47,1999.

MINK, J.H., Levy, T. & Crues, J.V.: **Tears of the anterior cruciate ligament and meniscal of the knee: MRI imaging evaluation. Radiology** 167: 769-774, 1988.

NOYES, F .R.; LINDENFELD, T.N.; MARSHALL, M.T. What determines an athletic injury (definition)? Who determines an injury (occurrence)? **The American Journal Sports Medicine**, Walthan, v.16, p.65-8, 1988.

PETERSON, L.; JUNGE, A.; CHOMIAK, J.; GRAFF-BAUMANN, T.; DVORAK J. Incidence of football injuries and complaints in different age groups and skill-level groups. **Sports Medicine, Auckland**, v.28, n.5, p.51-7, 2000.

PIASECKI, DP. et al. Intraarticular injuries associated with anterior cruciate ligament tear: findings at ligament reconstruction in high school and recreational athletes . **An analysis of sex-based differences.** Disponível em http://www.ncbi.nim.gov/entrez/query.fcgi?cmd=Retrieve&db=PubMed&list_uids=12860552&dopt=Abstratc Acesso em 04 setembro 2009.

RIBEIRO, R.N; COSTA, L.O.P. Análise epidemiológica de lesões no futebol de salão durante o XV Campeonato Brasileiro de Seleções Sub 20**. Revista Brasileira de Medicina do Esporte ,** SÃO Paulo, v.12, n.1, p. 1-5,2006.

SCHMIDT-OLSEN, S.; JORGENSEN, U.; KAALUND, S.; SORENSEN, J. Injuries among young soccer players. The American **Journal Sports Medicine,** Walthan, v.19, n.3, p.273-5, 1991.

SILVA, Paulo Roberto Santos. O **papel do Fisiologista Desportivo no futebol - Para que? e Por que? Reabilitar**, 13:30-35, 2001.

SILVA, Rogério de Paula. Estudo das alterações posturais em indivíduos portadores de Síndrome da Dor Patelo-femoral. **Reabilitar** 15:6-19,2002.

SILVA MVD. Anatomia do joelho. In: Espregueira-Mendes J, Pessoa P, editors. **O Joelho. Lousã: Lidel** - Edições Técnicas, Lda; 2006. p. 1-22.

TANAKA, Clarice e FARAH, Estela. **Anatomia funcional das cadeias musculares.** São Paulo: Ícone, 1997. 105 p.

VAN MECHELEN, W.; HLOBIL, H.; KEMPER, H.C.G. Incidence, severity, aetiology and prevention of sports injuries: a review of concepts. **Sports Medicine,** Auckland, v.14, n.2, p.88-99, 1992.

WALDÉN M, HÂGGLOND M, EKSTRAND J. Injuries in Swedish elite football – a prospective study on injury definitions, risk for injury and injury pattern during 2001. **Scand J Med Sci Sports.** 2005;15(2):118-25

WALDÉN, M,.;HÂGGLUND , M.; EKSTRAND, J. Injuries in swedish elite football-a prospective study on injury definitions, risk for injury and injury pattem during 2001. **Scandinavian Journal of Medicine & Science in Sports, Copenhagen**,p.1-8,2004.BUSQUET, Léopold. As cadeias musculares - volume 2, Lordoses - Cifoses - Escolioses e Deformações Torácicas. 1ª **Edição. Edições Busquet**, Belo Horizonte, 2001. 191 p.

COHEM, M. & ABDALLA, R. J**. Lesões nos Esportes**:Rio de Janeiro: Editora Revinter, 2003. 937 p.

DENYS-STRUYF, Godelieve. **Cadeias musculares e articulares: o método G.D.S.** São Paulo, Editora Summus, 1995. 133 p.

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INJURIES OF THE ARTICULATION OF KNEE OCCURRED IN PRACTICE OF RECREATINAL SOCCER IN SANTAREM IN THE PARA STATE

ABSTRACT

This study is retrospective and it is characterized as a descriptive and inferential research with the using of qui-square of Peterson to set up a correlation. The objective of this work was to do a survey of the prevalence of the injuries of the articulations of the knee through the using of methods such as questionnaire, anamnesis and the exam of magnetic resonance to correlate them with the time of practice in this modality. The sample comprehended 30 practice of recreational soccer between 20 and 45 years old, who suffered injuries in the period from January 1st of 2006 to December 30th of 2008. The found results demonstrated that 83,33% of occurred injuries are of anterior cruciate ligament, medial meniscus, 16,67% of all the injuries associations. It follows that the less time used to practice of recreational soccer, the more incidence of injuries will occur, having as correction of p< 0,0001.

KEY WORDS: Knee, soccer, magnetic resonance

LÉSIONS SURVENUES AUX GENOUS DANS LA PRATIQUE DU FOOTBALL RÉCRÉATIF DANS LE DISTRICT MUNICIPAL DE SANTAREM-PA

RÉSUMÉ:

Cette étude est rétrospective etse caractérisé comme une recherche descriptive et référencielle dont l'objectif a été de faire y inventaire des fréquences des lesions de l'articulation du genou et correspondre avec le temps d'entraînement de sport. Comme l' objectif a été d'identifier les lésions à travers l'Image de résonance magnétique (IRM). L'échantillon étudié a été constitué de trente 30 praticants du football récréatif âgés 20 à 45 ans,la moyenne étantde 35,3 ans, les quells ont présenté les lésions prouvées à travers les examens (IRM), les fréquences sont faites dans la période du 01 janvier 2006 ou 30 décembre 2008, et arrivees dans la pratque. Comme instrument de mesure, a été utilisé un questionnaire et l'examen IRM, et la collection des données a' été faite á lá clinique orthopédique de Santarém. A partir des résultats obtenus, La statistique descriptive et référencielle dénommés et encâdrée pour établir la conclusion, nous sommes arrivés aux résultats suivants: les principales lésions sont de ligament croisé antérieur 83,3%, de blessures se produites est de ligament du cruciate antérieur, ménisque intermédiaire, 16,67% de toutes les associations des blessures. Il suit que le moins que le temps pratiquait de football destiné aux loisirs, le plus la fréquence de blessures se produira, en ayant comme correction de prévalene de <0,0001 pour lês lésions em general, alôs .

MOTS DE LA CLEF: Donnez un coup de genou, football, résonnance magnétique

LAS LESIONES DE LA ARTICULACIÓN DE LOS PASAMOS LA RODILOBTENUS, LA EN LA PRÁCTICA DE FUTEBOL RECREACIONAL EN EL DISTRITO MUNICIPAL DE SANTARÉM DE LA PALA

RESUMEN

Este estudio es retrospectivo y se caracteriza como una investigación descriptiva e ilativa con el usar de qui-cuadrado de para preparar una correlación. El objetivo de este trabajo era hacer un estudio del predominio de las lesiones de las articulaciones de la rodilla a través del usar de métodos como la encuesta, anamnesis y el examen de resonancia magnética ponerlos en correlación con el tiempo de práctica en esta modalidad. La muestra comprendió 30 el practicer de fútbol recreativo entre 20 y 45 años viejo, quién sufrió las lesiones en el período del 1 de enero de 2006 al 30 de diciembre de 2008. Los resultados encontraron demostraron que 83,33% de ocurrió las lesiones son de ligadura del cruciate anterior, medio menisco, 16,67% de todas las asociaciones de las lesiones. Sigue que el menos que tiempo practicaba de fútbol recreativo, el más la incidencia de lesiones ocurrirá y tendrá como corrección de p <0,0001.

LAS PALABRAS DE LA LLAVE: Dé con la rodilla, fútbol, la resonancia magnética,

LESÕES DA ARTICULAÇÃO DO JOELHO OCORRIDAS NA PRÁTICA DO FUTEBOL RECREACIONAL NO MUNICÍPIO DE SANTARÉM DO PARÁ

RESUMO

Este estudo é retrospectivo e caracteriza-se como uma pesquisa descritiva e inferencial com a utilização do qui-quadrado para se estabelecer uma correlação. Seu objetivo foi fazer o levantamento das prevalências das lesões da articulação do joelho através da utilização de métodos como questionário, anmenese e o exame de ressonância magnética e após esses dados correlacionar com o tempo de prática nesta modalidade. A amostra foi constituída de 30 praticantes com idade 20 a 45 anos , e que sofreram a lesão no período de 01 de janeiro de 2006 a 30 de dezembro de 2008. Os resultados encontrados demonstram que 83,33% das lesões ocorridas são de ligamento cruzado anterior associada ao menisco medial, 16,67 % de todas as lesões associações. Conclui-se que quanto menor tempo de pratica maior incidência de lesão, tendo como correlação do p< 0,0001.

PALAVRAS CHAVES: Joelho, futebol, ressonância magnética

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