

REVIEW

The locomotor system as seen in Brazilian scientific journals: a mini review

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OBJECTIVE: To make recent selected publications on the locomotor system available to the readership of Clinics.

METHOD: A general survey of articles published in selected Brazilian journals was inspected and 91 articles were critically analyzed. They were categorized and briefly described. A final summary of themes is reproduced here.

RESULTS: Papers fall into two main categories: articular and muscular pathology and therapeutics; medical sports. A number of papers are not classifiable under these headings.

CONCLUSION: The locomotor system has been extensively analyzed and discussed in the Brazilian scientific press in recent years. Not surprisingly, knee and ankle pathology, soccer and running are dominant themes.

KEYWORDS: Locomotor system; Sports medicine; Osteoarticular pathology; Muscular dysfunction.

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INTRODUCTION

In its function of presenting medical scientific data to our readership, we endeavor to generate critical review articles on subjects covered by Brazilian journals which are now gradually acquiring a higher level of international visibility, largely through recent inclusion in such databases as PUBMED, SCIMAGO and ISI THOMSON JCR. To cover the field of the locomotor system a general survey of articles published in selected Brazilian journals was inspected and 91 articles were critically analyzed. A number of articles come from our own periodical, but only cover contributions published in this year (2010). Selected articles were categorized and briefly described. A final summary of themes is reproduced.

METHOD

Examining articles directly or indirectly related to the locomotor system we detected a sample of 91 recently published articles by the journals listed in Table 1; this also shows the distribution of the articles throughout the seven selected journals. As might be expected, *Acta Ortopédica Brasileira* and *Revista Brasileira de Medicina do Esporte* are the most important contributors.

Table 2 shows the main aspects covered in these articles. In terms of anatomical structures, the knees predominate,

while in terms of sports modalities, the generic title of exercise represents the largest number of publications.

GENERAL ANALYSIS

Anatomical problems: Selected papers cover anatomical problems of the foot, ankle, hip, knee, and shoulder as well as problems dealing with muscle and posture.

Five articles cover anatomical problems of the foot and ankle: a new screw is described for the surgical treatment of metatarsal lesions;¹ the arterial anatomy in congenital clubfoot was evaluated;⁷ the epidemiology of ankle sprains in volleyball high performance athletes was evaluated;¹² a biomechanical study on the stabilization of tarsometatarsal joint arthrodesis was performed;¹⁷ the effects of the active ankle system stabilizer in the vertical jump height in volleyball players is discussed.⁷⁴

Four articles cover hip problems: describe predictive factors for gait in femoral transtrochanteric fractures is analyzed;⁶ a new semiologic maneuver for the diagnosis of peritrochanteric bursitis is described;⁸ postoperative gait function following direct lateral and posterolateral approaches for total hip arthroplasty was compared;¹⁴ a discussion of physical and sports activity after hip arthroplasty is presented.⁸²

As might be predicted the knee is the most frequently examined anatomical subject, with 12 selected papers: knee stability and mechanics is the object of four papers;^{2,3,16,36} anesthetic procedures for knee surgery is discussed in 2 articles;^{27,34} various forms of knee injury are discussed in four articles;^{5,10,13,70} one article examines the properties of synovial plicae³⁰ while one deals with osteoarthritis.³²

Eight articles highlight muscular problems: muscular mechanics is the object of five publications;^{18,71,78,83,86} muscular injuries and treatment thereof are examined in

Table 1 - Distribution of articles by publication source.

Journal	number of articles	references
Acta Ortopedica Brasileira	18	1-18
Arquivos Brasileiros de Endocrinologia e Metabologia	7	19-25
Clinics	14	26-39
Jornal Brasileiro de Pneumologia	10	40-49
Revista Associação Médica Brasileira	7	50-56
Revista Brasileira de Cirurgia Cardiovascular	11	57-67
Revista Brasileira de Medicina do Esporte	24	68-91

Table 2 - Subject index of Brazilian journal publications on the locomotor system.

Subject	references
1. Anatomical	
Foot/Ankle	1,7,12,17,74
Hip	6,8,14,82
Knee	2,3,5,10,13,16,27,30,32,34,36,70
Muscle	4,11,18,28,71,78,83,86
Posture	33,69
Shoulder	15
2. Sport modalities	
Exercise (generic)	9,11,12,13,20,23,25,31,32,35,41,44,45,48,50,54,55,57,59,60,61,66,67,73,75,79,80,82,84,90
Cyclism	85
Football/Soccer	1,70,88
Running	69,71,72,76,87
Sailing	91
Swimming	68,77,81
Volleyball	74
3. Other	
Metabolic Syndrome	19,21,22,24,37,42,52,55
Miscellaneous	29,38,39,40,43,46,47,49,51,53,56,58,62,63,64,65

two articles^{4,11} while one article deals with the histology of frozen muscle.²⁸

Two articles cover problems related to posture,^{33,69} while a single paper examines anatomical problems in the shoulder.¹⁵

Sport modalities. By far the most frequently covered subjects were the repercussions of exercise, examined generically, on the locomotor system. Table 2 lists 29 articles covering different sports modalities and different aspects of the locomotor function. Specific sports analysis are covered for cyclism, football/soccer, running, sailing, swimming, and volleyball. The musculoskeletal injuries in athletes of the 2006 season's Brazilian women's speed canoeing team were described;¹¹ Anaerobic Power Output of Elite Off-road Cyclists With Acute Oral Creatine Supplementation was measured;⁸⁵ three papers cover lesions and their treatment in football/soccer players;^{1,70,88} running is discussed in five articles^{69,71,72,76,87} covering posture, muscle contraction velocity, lactate production in an experimental murine model of running, injuries, and the effect of water temperature on aquatic walking; an epidemiological analysis is performed on Brazilian sailing athletes at different levels of technical competence;⁹¹ three articles cover swimming: nutrition of disabled subjects practicing swimming is analyzed,⁶⁸ the effects of swimming and resistance training on bone mineral density was measured⁷⁷ and the initial

swimming ability in patients with spinal cord injury was analyzed.⁸¹ A single paper is dedicated to one of Brazil's most successful sporting modalities, volleyball, in which the mechanics on the spiking/blocking jump of high performance volley players is subject to an interesting procedure of mechanical evaluation.⁷⁴

Metabolic syndrome and its correlations with the locomotor system are the object of eight articles:^{19,21,22,24,37,42,52,55} they cover critical problems relating to the effects of overweight and obesity upon the motor system, sporting performance, the ability of the cardiovascular system to adjust to exercise, and to ageing.

Table 2 also shows that as many as 16 published articles relate to the locomotor system but cannot be categorized under specific headings. Readers are advised to go through this collection and pick what may most interest them.

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