Reumatología Clínica

Original

Characterization of Knee Osteoarthritis in Latin America. A Comparative Analysis of Clinical and Health Care Utilization in Argentina, Brazil, and Mexico

Rubén Burgos-Vargas [a,*], Mario H. Cardiel [b], Adalberto Loyola-Sánchez [c], Mirhelen Mendes De Abreu [d], Bernardo A. Pons-Estel [e], Michel Rossignol [f], Bernard Avouac [g], Marcos Bosi Ferraz [h], Hafid Halhol [i]

[a] *Hospital General de México and Universidad Nacional Autónoma de México, México City, Mexico*
[b] *Hospital General Dr. Miguel Silva, Morelia, Mexico*
[c] *School of Rehabilitation Science, McMaster University, Ontario, Canada*
[d] *Federal University of São Carlos, Sao Paulo, Brazil*
[e] *Hospital Provincial de Rosario y Sanatorio Parque, Rosario, Argentina*
[f] *McGill University, Montreal, Canada*
[g] *Hospital Henri Mondor, Créteil, France*
[h] *Universidade Federal de Sao Paulo, Sao Paulo, Brazil*
[i] *Laboratoires Expanscience, Courbevoie, France*

A R T I C L E   I N F O

A B S T R A C T

Background: The burden of knee osteoarthritis (OA) in Latin America is unknown.
Objective: To determine the demographic, clinical, and therapeutic characteristics of patients with OA in Argentina, Brazil, and Mexico.
Material and methods: This is an observational, cross-sectional study of patients with symptomatic knee OA referred from first care medical centers to Rheumatology departments.
Results: We included 1210 patients (Argentina 398, Brazil 402, Mexico 410; mean age 61.8 [12] years; 80.8% females). Knee OA pain lasted for 69 months; the duration and severity of the last episode were 190 days and (SD 5.2 [3.3]; 74% had functional limitations, but very few patients lost their job because of knee OA. Around 71% had taken medications, but 63% relied on their own pocket to afford knee OA cost. Most demographic and clinical variables differed across countries, particularly the level of pain, disability, treatment, and access to care. The variable country of origin influenced the level of pain, disability, and NSAIDs use in logistic regression models; age, pain, treatment, and health care access influenced at least 2 of the models.
Conclusions: The burden of knee OA in Latin American depends on demographic, clinical, and therapeutic variables. The role of such variables differs across countries. The level of certain variables is significantly influenced by country of origin and health care system.

Características de la Artrosis de la Rodilla en América Latina. Análisis Comparativo de la Utilización de Servicio Clínicos y Cuidados de la Salud en Argentina, Brasil y México

R E S U M E N

Antecedentes: La carga de la artrosis de rodilla (OA) en América Latina se desconoce.
Objetivo: Determinar las características demográficas, clínicas y terapéuticas de los pacientes con OA en Argentina, Brasil y México.
Material y métodos: Se trata de un estudio observacional, transversal, de pacientes con OA sintomática que son derivados de centros de atención primaria a los departamentos de reumatología.
Resultados: Se incluyeron 1.210 pacientes (Argentina 398, Brasil 402, México 410), con una media de edad de 61,8 (12) años; el 80,8% eran mujeres. El dolor de la OA de rodilla se prolongó durante 69 meses,

* Corresponding author.
 E-mail address: burgosv@prodigy.net.mx (R. Burgos-Vargas).

la duración y la gravedad del último episodio fueron 190 días, y (DS 5,2 [3,3]; el 74% tenían limitaciones funcionales, pero muy pocos pacientes perdieron su empleo a causa de la OA de rodilla. El 71% había tomado medicamentos, pero el 63% lo pagó de su propio bolsillo. La mayoría de las variables demográficas y clínicas difieren entre los países, en particular el nivel de dolor, la discapacidad, el tratamiento y el acceso a la atención. La variable de país de origen influyó en el nivel de dolor, discapacidad y AINE a utilizar en los modelos de regresión logística; la edad, el dolor, el tratamiento y el acceso a la atención de salud influyó por lo menos a 2 de los modelos.

Conclusiones: La carga de la OA de rodilla en América Latina depende de las variables demográficas, clínicas y terapéuticas. El papel de estas variables difiere entre países. El nivel de ciertas variables se ve influido significativamente por el país de origen y el sistema de atención de la salud.

Introduction

Osteoarthritis (OA) is the most common rheumatic disease in the general population and its prevalence increases with age.[1,2] Genetic, mechanical, and several other factors have been implicated in its origin.[3] OA symptoms such as joint pain, reduced mobility, crepitus, and swelling result from articular cartilage loss, subchondral bone proliferation, bone misalignment, and synovitis. The management of patients with OA includes a number of pharmacologic and non-pharmacological recommendations tailored in accordance to the joints involved.[4–7] General physicians (GPs) see most patients with OA; referrals to specialized departments depend on surgical needs and patient preference.[8]

The knee is the largest joint most commonly involved in OA. The prevalence of knee OA ranges from 1.4% in urban Philippines[15] to 19.3% in rural Iran[16] whereas that of "painful knee OA" ranges from 6.5% to 28%.[9–13] The age-standardized prevalence of knee OA is 1770 *per* 100 000 males and 2693 *per* 100 000 females.[14] Along with hip OA, knee OA impairs physical functioning and decreases the quality of life of patients with OA.[17–19] Mechanical factors, particularly those involved in the wear and tear processes in the joints, including body overweight and heavy-load work are major causes of the disease.[20] There is an important association between knee pain and disability, which depends on the age of the patient, disease characteristics, and outcome measures.[10–12,21]

The prevalence and characteristics of OA in Latin America is partially known. Studies made according to World Health Organization/International League Associations for Rheumatology Community Oriented Program for the Control of Rheumatic Diseases (COPCORD) have shown a that the prevalence of OA in 2 Mexican studies is 2.3%[22] and 10.5%,[23] in Guatemala 2.8%,[24] in Brazil 4.1%,[25] in Peru 14.4%,[26] and in Cuba 20.4%.[27] Although these variations may reflect ethnical factors, it is also possible that methodological differences, demographic characteristics, and medical care accessibility might also influence those findings. Consequently, we developed an initiative for the study of knee OA in order to document its clinical features and consequences in patients living in Argentina, Brazil, and México. Specifically, we aimed to describe the level of symptoms and functional limitations in patients with clinical knee OA, the types of health care they access and the strategies followed in each country to deal with signs and symptoms of the disease.

Material and Methods

This was an observational, cross-sectional study of patients with symptomatic knee OA carried out in Argentina, Brazil, and México. Institutional review boards at each country approved the protocol and informed consent of this study. The participants were informed about the nature of the study before signing an informed consent.

The population included in this study was a convenient sample of ambulatory patients with knee pain attributed to OA[28] by trained General Physicians (GPs) in primary medical care units from where patients were referred to Rheumatology specialized departments in Argentina, Brazil, and Mexico in a 12-month period. Case definition referred to men and women >18 years old who complained of unilateral or bilateral weight bearing, non-traumatic, and non-inflammatory knee pain for >6 months and a current episode of continuous or sporadic knee pain of >1 month. Patients with a confirmed diagnosis of any active inflammatory rheumatic disease, including rheumatoid arthritis, spondyloarthritis, gout, calcium pyrophosphate dehydrate crystal deposition disease, connective tissue diseases, and infectious arthritis were not included in the study. Likewise, patients with congenital lower limb malformations, serious functional impairment, disability or chronic disease causing impaired functioning as consequence of foot, ankle, or hips involvement were not included in the study. The diagnosis of knee OA was established by GPs according to the American College of Rheumatology classification criteria.[28] Patients' assessment, including demographic data, clinical symptoms, physical function, health care utilization, and therapeutics was performed at the Rheumatology department.

We collected information on age, gender, occupation, height, weight, and body mass index (BMI). Ethnicity was operationally defined in accordance to parents and all 4 grandparents' ethnicities as follows:[29] (1) Whites: subjects with White European ancestors; (2) Mestizos: subjects with Amerindian and White European ancestors; (3) African Latin Americans: subjects who have at least one African ancestor irrespective of whether other ancestors were White or Amerindian; and (4) Pure Amerindians: subjects with all autochthonous ancestors.

Clinical variables included the duration of the disease and of the current episode of pain, its characteristics, and intensity in the last 6 months. We classified the localization of knee pain either as generalized (tenderness in all the knee) or localized (tenderness either in the internal, external, or patello-femoral aspects of the knee). We also looked for joint crepitus during movement and knee swelling. The assessment also included a characterization of diagnostic and therapeutic medical and non-medical interventions, type of health insurance coverage, and physical functioning using the Spanish version of the Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC).[30] We also incorporated an item exploring the ability to perform activities of daily living and its relationship with keen pain as follows: (1) I do not have any problem to perform my normal daily activities, (2) I have some difficulties to perform some of my daily activities due to knee pain, (3) I have difficulties to perform most of my daily activities due to knee pain and (4) I am unable to perform most of my daily activities due to knee pain.

Statistical Analyses

General and *per* country analyses were performed. These included descriptive and inferential analyses of demographic and