rpr REVISTA PARAGUAYA DE REUMATOLOGÍA

Original

ARTICULAR COMPROMISE AFTER CHIKUNGUNYA FEVER IN A SECOND TIER HOSPITAL DURING THE 2015 EPIDEMIC. ASUNCIÓN, PARAGUAY

Jhonatan Losanto[2], Susan Riquelme-Granada[2], Yanira Yinde[2], Margarita Duarte[2], Francisco Giménez[1], Aldo Ojeda[1.2]

[1]Hospital Distrital de Villa Elisa, Asunción, Paraguay
[2]Hospital de Clínicas. Facultad de Medicina, Universidad Nacional de Asunción, San Lorenzo, Paraguay

Fecha de envío
10/12/2017
Fecha de aprobación
18/12/2017

Keywords
Chikungunya, fever, virus, arthritis

ABSTRACT

Introduction: Chikungunya fever is a viral disease caused by an alphavirus from the Togaviridae family, that is transmitted by mosquitoes of the genus Aedes. It is manifested by fever, skin rash and joint pain. A high percentage of patients develop a persistent polyarthritis that can last for months or even years.
Objectives: To describe the clinical and epidemiological characteristics of patients diagnosed with arthritis after Chikungunya fever.
Materials and methods: A retrospective, cross-sectional study of patients who were seen at the District Hospital of Villa Elisa during the first semester of 2015, and were diagnosed with Chikungunya fever.
Results: A total of 26 patients from Asunción were included, of which 92% were women, with an average age of 47.2 years. The predominant symptoms were arthralgia (92.3%) and headache (76.9%). Joint symptoms started on average 14 days after the onset of fever. The proximal metacarpophalangeal and interphalangeal joints were affected in 73% of the patients, the radiocarpal and knee joints in 76.9%, shoulders in 50% and feet in 92.3%. All patients were treated with NSAIDs and 76.9% received treatment with prednisone, with partial or total improvement of symptoms in 92.3% of the cases. Two patients (7.6%) required Methotrexate due to the persistence of arthritis after corticosteroids were discontinued.
Conclusion: Chikungunya fever is a major health issue in our country, especially due to its ability to generate rheumatological complications in the medium and long run. We must pay special attention to this pathology since the chronic joint compromise can lead to disability and labor absenteeism, which would translate into overload of the public health system.

RESUMEN

Palabras claves:
Chikungunya, fever, virus, arthritis

COMPROMISO ARTICULAR DESPUÉS FIEBRE CHIKUNGUNYA EN UN HOSPITAL DE SEGUNDO NIVEL DURANTE LA EPIDEMIA 2015. ASUNCIÓN, PARAGUAY

Introducción: La fiebre de Chikungunya es una enfermedad viral causada por un alfavirus de la familia Togaviridae, que se transmite por los mosquitos del género Aedes. Se

manifiesta por fiebre, erupción cutánea y dolor en las articulaciones. Un alto porcentaje de pacientes desarrolla una poliartritis persistente que puede durar meses o incluso años.
Objetivos: describir las características clínicas y epidemiológicas de los pacientes diagnosticados de artritis después de la fiebre de Chikungunya.
Materiales y métodos: Estudio retrospectivo, transversal, de pacientes que fueron atendidos en el Hospital de Distrito de Villa Elisa durante el primer semestre de 2015 y fueron diagnosticados con fiebre de Chikungunya.
Resultados: Se incluyeron un total de 26 pacientes de Asunción, de los cuales el 92% eran mujeres, con una edad promedio de 47,2 años. Los síntomas predominantes fueron artralgia (92.3%) y cefalea (76.9%). Los síntomas articulares comenzaron en promedio a los 14 días después de la aparición de la fiebre. Las articulaciones metacarpofalángicas proximales e interfalángicas se vieron afectadas en el 73% de los pacientes, las articulaciones radiocarpales y de rodilla en el 76,9%, los hombros en el 50% y los pies en el 92,3%. Todos los pacientes fueron tratados con AINE y 76.9% recibieron tratamiento con prednisona, con mejoría parcial o total de los síntomas en 92.3% de los casos. Dos pacientes (7,6%) requirieron Metotrexato debido a la persistencia de la artritis después de que se interrumpieron los corticosteroides.
Conclusión: La fiebre de Chikungunya es un importante problema de salud en nuestro país, especialmente por su capacidad de generar complicaciones reumatológicas a mediano y largo plazo. Debemos prestar especial atención a esta patología ya que el compromiso conjunto crónico puede conducir a la discapacidad y el ausentismo laboral, lo que se traduciría en una sobrecarga del sistema de salud pública.

Author for correspondence:
Email:
aldojeda@gmail.com
(A. Ojeda)

INTRODUCTION

Chikungunya fever is a viral disease, recently introduced to the American continent, that became a bigger threat than those already existing in the group of viral diseases transmitted by mosquitoes[1]. The WHO defines Chikungunya fever (CHIK) as an emerging disease transmitted by Aedes aegypti and albopictus mosquitoes, which are the same species involved in the transmission of dengue. It is caused by a virus of the alphavirus genus (CHIKV) that is native to the African continent. In the last decade, however, the disease has evolved epidemiologically, and expanded its geographic range throughout the Americas, becoming a threat not only to Africa but to our continent as well[1,2]. In general, the epidemies caused by this virus are characterized by a cyclical presentation, with periods of 4 to 30 years. Paraguay has been an endemic country for Dengue virus for several years. Both vectors of the Aedes genus are found in our territory, each of them capable of transmitting CHIK and Dengue. The ease of dissemination due to the abundance of vectors has made containment of the disease an arduous task for health authorities[2]. The first Chikungunya fever cases reported in Paraguay, were imported from tourists who visited endemic areas in Central America. In February 2015, the detection of 8 autochthonous cases in the Kocue Guazú neighborhood of the Fernando de la Mora marked the arrival of the CHIKV to the country. The clinical manifestations of acute infection with CHIKV are similar to those of any infection by the Togaviridae family[1,2] and the are listed in order of frequency in Table 1.

Table 1 Clinical Manifestations of Chikungunya Fever.

Signs / symptoms	Frequency %
Fever	76-100
Polyarthralgia	71-100
Headaches	17-74
Myalgia	46-72
Back pain	34-50
Nausea	50-69
Vomit	4-59
Rash	28-77
Polyarthritis	12-32
Conjunctivitis	3-56

Source: Taken from PAHO / WHO / CDC. Preparation and response to the eventual introduction of the Chikungunya virus in the Americas[1].

Articular compromise has a particular characteristic in this infection. A significant percentage of patients have persistent pain and joint inflammation beyond the acute febrile period, in some cases becoming chronic, lasting for months or even years. In these cases, the disease leaves the infectious field to enter the spectrum

of chronic joint pathologies, and the participation of the rheumatologist becomes essential for the management of the patients. Our objective is to describe the clinical and epidemiological characteristics of patients diagnosed with post-Chikungunya fever arthritis treated in a public care center in Asunción and surrounding areas.

MATERIALS AND METHODS

A retrospective, cross sectional study of patients diagnosed with chikungunya fever at District Hospital of Villa Elisa, Greater Asunción, during the CHIK epidemic from February to July 2015 was carried out. The clinical and demographic characteristics were described, as well as treatment and patient outcomes. Arthritis and arthralgias were defined based on clinical criteria as assessed by a rheumatologist and the diagnosis of Chikungunya fever was made based on serology or epidemiological link. The statistical analysis was performed with the SPSS program version 19.0. The qualitative variables were expressed as frequencies and percentages, while the quantitative variables were averaged.

Table 2 Epidemiological characteristics.

Epidemiological characteristics	Values
Age (in years)	47,2
Sex: Female (%) Male (%)	 24/26 (92%) 2/26 (8%)
Location: Great Asuncion	26/26 (100%)

Table 3 Clinical characteristics.

Signs / symptoms	Values
Fever duration (in days)	2,86
Articular involvement (%)	24/26 (92,3%)
Skin rash(%)	24/26 (92,3%)
Headache (%)	20/26 (76,9%)
Duration of skin rash (in days)	4,5

Table 4 Characteristics of joint involvement.

Committed joints	Values n%
Feet (tarsal and ankles)	24/26 (92,3%)
Radiocarpal	20/26 (76,9%)
Knees	20/26 (76,9%)
Metacarpophalangeal and interphalangeal	19/26 (73%)
Shoulders	13/26 (50%)

RESULTS

From the total visits to the rheumatology office, during the study period, a total of 26 patients with joint symptoms after chikungunya fever were identified. The epidemiological and clinical characteristics obtained are described in the following 2 tables.

Joint involvement was found in 24/26 (92.3%) patients. Arthralgias without arthritis were present in 4/24 (16, 6%) patients and 20/24 (83.3%) had frank arthritis. The distribution of joint involvement, is described in Table 4.

All patients received therapy with non-steroidal anti-inflammatory drugs, 20/26 (76, 9%) also received low doses of prednisone and in 2/26 (7.6%) patients Methotrexate was added due to persistent arthritis after discontinuation of corticosteroids.

DISCUSSION

The predominant symptom in our group of patients was joint involvement. Arthralgias and / or arthritis, was found in 83.3% of the patients, which was somewhat higher than previous reports[1].

Joint symptoms occurred on average 14 days after the fever began. The most affected joints were the feet (tarsus and ankles), followed by the knees, wrists, metacarpophalangeal and proximal interphalangeal joints and shoulders. These findings were very similar to what is cited in other studies[3,4]. Among patients diagnosed with arthritis after CHIKV, 76.9% received prednisone, mostly due to persistent arthritis, despite treatment with NSAIDs.

In the majority, low doses of corticosteroids were administered for a short period of time. However, other patients required high doses of prednisone at the beginning (up to 40 mg / day) due to the significant joint involvement translated by considerable functional disability. All of them were weaned to minimal doses progressively over the course of two weeks.

Since there are no standardized treatment guidelines and little is known about the efficacy of antiviral treatment in the acute and chronic phase[8], treatment is usually extrapolated from the management of other

diseases. Partial or total improvement of symptoms occurred in the majority of our patients (92.3%). However, 2 patients had to receive Methotrexate due to persistence of arthritis and inability to wean off steroid, thus entering the group of chronic inflammatory rheumatism (CIR). Interestingly, the number of patients with post-CHIKV CIR in this study is somewhat lower than that of other countries. In Colombia, according to some studies, aprox 3 million cases were detected between 2014 and 2015, and close to 50% were affected with or were at risk for post CHIKV5 CIR. This work found similar trends to the first publications of large populations in Reunion Island, in which a significant percentage of patients with CHIK progressed to chronic joint or musculoskeletal symptoms[6]. Another interesting fact in this study was that all patients received treatment with non-steroidal anti-inflammatory drugs, whether due to joint pain or soft-tissue pain or headache. The most commonly prescribed antinflammatory was diclofenac alone or in combination with paracetamol, in agreement with treatment recommendations of the Ministry of Public Health and Social Welfare[2,7]. The average duration of the acute febrile episode in these patients was approximately 3 days, a rather short period in comparison with other arboviruses[1,2]. A significant percentage of patients presented with skin rash (92.3%), a finding described as more characteristic in infections by other viruses such as Zika or dengue than in patients with Chikungunya fever. The rash lasted an average of 4.5 days.

CONCLUSION

Chikungunya fever represents a major public health problem, due to its ability to generate rheumatological complications in the medium and long run. Special attention must be paid this pathology, in view of the abundance of vectors in our country, the ease of dissemination and to the overlap with other infectious diseases prevalent in our environment such as dengue or Zica. Although chronic inflammatory compromise of the joints was not very common in this study, it can have an important impact on patients' quality of life, with variable degrees of disability, predisposing to work absenteeism.

CONFLICTS OF INTEREST

The authors have no conflict of interest to declare.

BIBLIOGRAPHY

1. La eventual introducción del virus chikungunya en las Américas [Internet]. Washington, D.C: Organización Panamericana de la Salud; 2011 [cited 25 March 2018]. Available from: http://www1.paho.org/hq/dmdocuments/CHIKV_Spanish.pdf

2. Guía para el manejo clínico de la enfermedad producida por el virus del Chikungunya. Pediatr. (Asunción) [Internet]. 2015 Apr[cited 2018 Mar 25] ; 42(1): 54-69. Available from: http:/scielo.iics.una.py/scielo.php?script=sci_arttext&pid=S1683-98032015000100009&lng=en. http://dx.doi.org/10.18004ped.2015.abril.54-69.

3. Javelle E, Tiong T, Leparc-Goffart I, Savini H, Simon F. Inflammation of the external ear in acute chikungunya infection: Experience from the outbreak in Johor Bahru, Malaysia, 2008. 2014.

4. Moro M, Grilli E, Corvetta A, Silvi G, Angelini R, Mascella F et al. Long-term chikungunya infection clinical manifestations after an outbreak in Italy: A prognostic cohort study. Journal of Infection. 2012;65(2):165-172.

5. Rodríguez-Morales Alfonso J., Anaya Juan-Manuel. Impacto de las arbovirosis artritogénicas emergentes en Colombia y América Latina. Rev.Colomb.Reumatol. [Internet]. 2016 Sep [cited 2018 Mar 25] ; 23(3): 145-147. Available from: http://wwwscielo.org.co/scielo.php?script=sci_arttext&pid=S0121812320160003000001&lng=en. http://dx.doi.org/10.1016/j.rcreu.2016.08.001.

6. Javelle E, Ribera A, Degasne I, Gaüzère B, Marimoutou C, Simon F. Specific Management of Post-Chikungunya Rheumatic Disorders: A Retrospective Study of 159 Cases in Reunion Island from 2006-2012. PLOS Neglected Tropical Diseases. 2015; 9(3):e0003603.

7. Plan de Contingencia de Dengue, ZIKA y Chikungunya 2017 [Internet]. Asunción: nstituto de Medicina Tropical; 2017 [cited 25 March 2018]. Available from: https://www.mspbs.gov.py/dependencias/imt/adjunto/adb710-denguezikaychicuguya2017corregido.pdf

8. Krutikov M, Manson J. Chikungunya Virus Infection: An Update on Joint Manifestations and Management. Rambam Maimonides Medical Journal. 2016;7(4):e0033.

9. Ganu M, Ganu A. Post-chikungunya chronic arthritis—our experience with DMARDs over two year follow up. Journal of the Association of Physicians of India [Internet]. 2011 [cited 25 March 2018];59:83-86. Available from: http://www.japi.org/february_2011/oa_post-chikungunya_chronic.pdfChopra A, Saluja M, Venugopalan A. Effectiveness of Chloroquine and Inflammatory Cytokine Response in Patients With Early Persistent Musculoskeletal Pain and Arthritis Following Chikungunya Virus Infection. Arthritis & Rheumatology. 2014;66(2):319-326.

10. Chopra A, Saluja M, Venugopalan A. Effectiveness of Chloroquine and Inflammatory Cytokine Response in Patients With Early Persistent Musculoskeletal Pain and Arthritis Following Chikungunya Virus Infection. Arthritis & Rheumatology. 2014;66(2):319-326.