

Chikungunya arthritis - should we expect it to become more common in Portuguese rheumatology?

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To the editor:

Chikungunya virus (ChikV) is an alphavirus known to cause acute disease characterized by fever, rash, myalgias, conjunctivitis and arthritis. As other alphavirus, ChikV may cause chronic (beyond 3 months of infection) musculoskeletal disease, namely persistent arthritis^{1,2}. Until 2004, ChikV transmission has been mostly circumscribed to Africa. However, it has been causing major outbreaks since then across the world and has been locally spreading in South America (and Brazil in particular) since 2013³. Brazilian community is the most prominent immigrant community in Portugal with a recent tendency to rise and Brazil is one of the most popular tourist destinations for Portuguese people⁴. Importantly, the *Aedes* mosquito, the vector of the virus, has been recently identified in some areas of Portugal⁵ and local transmission of ChikV has also been reported in Southern Europe⁶. In this letter, we report the identification and management of three consecutive cases of chronic ChikV arthritis “imported” from Brazil identified in two Portuguese rheumatology departments.

Case 1: a 52-year-old Brazilian female with ChikV infection in May 2016 was observed in March 2017 for persistent inflammatory arthralgias in her wrists and small joints of the hands. Wrists and metacarpophalangeal arthritis and flexor tenosynovitis of the fourth right finger were notable. Work-up revealed high erythrocyte sedimentation rate (ESR) and C reactive protein (CRP), negative antinuclear antibodies (ANA), rheumatoid factor (RF) and anti-citrullinated peptides antibodies (ACPA) and no erosive features in hands and feet radiographs. A short course of low-dose steroids and hydroxychloroquine were initiated with favorable response: symptoms and signs remitted in less than 6 months. The patient opted to suspend hydroxychloroquine after more

than a year without relapse of arthritis.

Case 2: a 32-year-old Brazilian female with probable Chikungunya fever in May 2018 has been evaluated since December 2018 for inflammatory wrists and feet small joints pain persisting after presumed infection. Metatarsophalangeal arthritis was identified. ESR and CRP were elevated, ANA, RF and ACPA were negative and no erosions or periarticular osteopenia could be identified in the radiographs. The same approach of low-dose steroids and hydroxychloroquine initiation was tried, again with favorable response and sustained remission of the symptoms after 3 months. The patient currently maintains hydroxychloroquine treatment.

Case 3: a 38-year-old Brazilian female was evaluated in December 2018 for inflammatory arthralgias and joint stiffness of her hands. She had serological confirmed Chikungunya fever in late 2017. Less than a year after full recovery, she developed persistent joint symptoms. Arthritis of all proximal interphalangeal hand joints was identified in the first evaluation. Subsequent work-up revealed elevated ESR and CRP, negative RF, ACPA and ANA and no radiological abnormalities. A weekly dose of 15mg of methotrexate was initiated along with a course of low-dose prednisone. Four months after methotrexate initiation and after steroids suspension, the patient reported no joint symptoms, arthritis was not clinically evident and inflammatory markers were negative.

The three cases (summarized in Table I) are representative of the chronic musculoskeletal disease caused by ChikV: a rheumatoid arthritis-like chronic symmetrical polyarthritis of small and medium joints, with frequent tenosynovitis and bursitis is the most typical pattern². Exclusion of coexisting inflammatory arthropathy is recommended. Suggested approaches for treatment of ChikV chronic arthritis include initiation of disease modifying anti-rheumatic drugs like hydroxychloroquine or methotrexate along with courses of steroids or non-steroidal anti-inflammatory drugs^{2,3}. The reported cases support this approach. Data re-

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TABLE 1. DEMOGRAPHICS AND CLINICAL CHARACTERIZATION OF CHIKUNGUNYA INDUCED ARTHRITIS CASES IDENTIFIED IN TWO CENTRES IN PORTUGAL

Case	Gender	Age	ChikV infection	MSK chronic symptoms and signs	Work-up	Therapy and outcome
1	Female	52	May 2016, Brazil – serological confirmation.	- Symmetrical wrists and MCPs arthritis; - Finger flexors tenosynovitis; - Persisting after acute infection.	- Elevated CRP and ESR; - Negative ANA, RF and ACPA; - No radiological abnormalities.	- Hydroxicloroquine 400mg/day + low-dose prednisone; - Remission of MSK symptoms in less than 6 months; - Hydroxicloroquine suspended after one year (patient's option), no relapse.
2	Female	32	May 2018, Brazil – probable case.	- Symmetrical wrists inflammatory pain and MTPs arthritis; - Persisting after acute infection.	- Elevated CRP and ESR; - Negative ANA, RF and ACPA; - No radiological abnormalities.	- Hydroxicloroquine 400mg/day + low-dose prednisone; - Remission of MSK symptoms in 3 months; - Hydroxicloroquine maintained, no relapse.
3	Female	38	December 2017, Brazil – serological confirmation.	- Symmetrical PIPs arthritis; - Beginning after acute infection resolution.	- Elevated CRP and ESR; - Negative ANA, RF and ACPA; - No radiological abnormalities.	- Methotrexate 15mg/week PO + low-dose prednisone; - Remission of MSK symptoms in 4 months; - Methotrexate maintained, no relapse.

ChikV – Chikungunya virus; MSK – musculoesquelétal; MCP – metacarpofalangeal; MTP – metatarsofalangeal; PIP – proximal interphalangeal; CRP – C-reactive protein; ESR – erythrocyte sedimentation rate; ANA – antinuclear antibodies; RF – rheumatoid factor; ACPA – anti-citrullinated proteins antibodies; PO – *per os*.

garding the experience of Portuguese rheumatology centres in identifying and treating chronic ChikV induced arthritis are not available. However, for previously mentioned reasons (migration patterns and spreading of the virus), the authors highlight the possibility of an increasing incidence of this clinical condition in the Portuguese context and underline the need to consider it in the differential diagnosis of musculoskeletal complaints when a previous infection is known or suspected.

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REFERENCES

1. Goupil BA, Mores CN. A Review of Chikungunya Virus-induced Arthralgia: Clinical Manifestations, Therapeutics, and Pathogenesis. *Open Rheumatol J.* 2016 Nov 30;10(1):129–40.
2. Pathak H, Mohan MC, Ravindran V. Chikungunya Arthritis. *Clinical Medicine.* 2019; 19(5): 381-385.
3. Marques CDL, Duarte ALBP, Ranzolin A, Dantas AT, Cavalcanti NG, Gonçalves RSG, et al. Recomendações da Sociedade Brasileira de Reumatologia para diagnóstico e tratamento da febre chikungunya. Parte 1 – Diagnóstico e situações especiais. *Rev Bras Reumatol.* 2017;57:421–37.
4. Serviço de Estrangeiros e Fronteiras. Relatório de Imigração, Fronteiras e Asilo 2019. Barcarena: Serviço de Estrangeiros e Fronteiras; 2020 Jun.
5. Centro de Estudos de Vetores e Doenças Infeciosas Doutor Francisco Cambournac. REVIVE 2018 Culicídeos e Ixodídeos - Rede de Vigilância de Vetores. Lisboa: Instituto Nacional de Saúde Dr. Ricardo Jorge; 2019 Apr.
6. Centers for Disease Control and Prevention. Chikungunya Virus - geographic Distribution [Internet]. Atlanta, Georgia: Centers for Disease Control and Prevention [updated 2019 Sep 19; cited 2020 Jul 2]. Available from: <https://www.cdc.gov/chikungunya/index.html>.