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## Introduction

- Chikungunya (CHIK) is an arboviral disease transmitted by the *Aedes* mosquito and characterized by fever, severe joint pains, myalgias and headaches<sup>1</sup>
- More than half a million cases were reported to the Ministry of Health of the Dominican Republic during an outbreak in 2014<sup>2</sup>
- The goal of this study was to evaluate the epidemiological characteristics and establish a clinical profile of pediatric patients who presented with CHIK during the outbreak.

## Methods

- This was a cross-sectional, retrospective review of patients diagnosed with CHIK at Robert Reid Cabral hospital (RRCH) during March and September, 2014.
- We used WHO criteria to define probable cases of CHIK<sup>3</sup>:
  - Clinical criteria: acute onset of fever >38.5 and severe arthritis/arthralgia not explained by other medical conditions
  - Epidemiological criteria: residing in or having visited epidemic areas, having reported transmission within 15 days prior to onset of symptoms
- We extracted demographic data from epidemiological forms and patient charts, and generated descriptive statistics and bivariate analysis.

## Results

- A total of 86 patients were diagnosed with CHIK at the RRCH during March-September 2014. Median age of the cohort was 3 years (IQR 1 month – 9.5 years). More than half were male (55.8%) and a significant proportion (55%) were hospitalized.
- The most frequent clinical manifestations were fever (100%), arthritis/arthralgias (100%), rash and other skin manifestations (55%), and headache (45.4%). Fever (71.8%) was the most common presenting symptom followed by arthritis/arthralgia (12.7%), rash (7.0%), and headache (4.2%).

## Results

**Table 1: Characteristics of a cohort of pediatric patients with probable CHIK infection**

| Characteristics of Population |                         |
|-------------------------------|-------------------------|
| Age (median, IQR)             | 3 years (0.1-9.5 years) |
| Gender N (%)                  |                         |
| Male                          | 48 (55.8%)              |
| Female                        | 38 (44.2%)              |
| Origin N (%)                  |                         |
| Dominican                     | 69 (95.8%)              |
| Other                         | 3 (4.2%)                |
| Residence N (%)               |                         |
| Urban                         | 46 (57.5%)              |
| Rural                         | 34 (42.5%)              |
| Setting of Care               |                         |
| Ambulatory                    | 38 (44.7%)              |
| Inpatient/ER                  | 47 (55.3%)              |

**Table 2: Presenting symptoms of a cohort of pediatric patients with probable CHIK**

|                          | All Children (N=86) | Newborns/infants (N=38) | Toddlers/ young children (N=48) | P value |
|--------------------------|---------------------|-------------------------|---------------------------------|---------|
| Fever                    | 86 (100%)           | 38 (100%)               | 48 (100%)                       | -       |
| Any arthritis/arthralgia | 86 (100%)           | 38 (100%)               | 48 (100%)                       | -       |
| Hand arthritis           | 10 (11.8%)          | 1 (2.6%)                | 9 (19.2%)                       | 0.02    |
| Foot arthritis           | 12 (14.0%)          | 1 (2.6%)                | 11 (22.9%)                      | 0.007   |
| Ankle arthritis          | 7 (8.1%)            | 0 (0%)                  | 7 (14.6%)                       | 0.02    |
| Other arthritis          | 7 (8.1%)            | 1 (2.6%)                | 6 (12.5%)                       | 0.13    |
| Arthralgia               | 71 (82.6%)          | 36 (94.7%)              | 35 (72.9%)                      | 0.008   |
| Rash                     | 47 (55%)            | 23 (60.5%)              | 23 (50%)                        | 0.39    |
| Headache                 | 39 (45.4%)          | 11 (28.9%)              | 28 (58.3%)                      | 0.007   |
| Vomiting                 | 15 (17.4%)          | 4 (10.5%)               | 11 (22.9%)                      | 0.13    |
| Conjunctivitis           | 1 (1.2%)            | 0 (0%)                  | 1 (2.1%)                        | -       |

## Results/Discussion

- Among hospitalized patients for whom there is clinical and laboratory data (n=13), the median number of febrile days was 2 (IQR 1-3) and median hospital stay was 6 days (IQR 6-7).
- Arthritis of the hands (p 0.02) and feet (p 0.007) was less common in newborns and infants (< 1 year age) compared to toddlers/pre-teens. Newborns/Infants were also more likely to be hospitalized (p<0.001).
- The main strength of this study is that it represents one of the largest pediatric case series of CHIK cases reported to date.
- The main limitation of the study was the lack of serologic confirmation of clinical cases.

## Conclusions

- Children with CHIK were more frequently urban males
- Fever, arthralgia/arthritis and rash were the most common first presenting signs in this group of children.
- Infants < 1 year of age were most frequently hospitalized and experienced less arthritis than toddlers and pre-teens.

## References

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