Seroprevalence dengue in college students in Asces Caruaru-PE Municipaly

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Abstract
Introduction: Dengue is a major public health problem in tropical countries due to favorable environmental conditions for the development and proliferation of aedes aegypti, the main vector of the disease. There is a relationship of DHF with sequential infection by different serotypes of the virus, so the prevalence of a population is important not only to confirm the virus, but also to serve as a warning in relation to DHF. Objective: To determine the seroprevalence of dengue in students of the Faculty ASCES in the city of Caruaru-PE. Methods: The proposed study was analytical cross-sectional. The work was carried out with students of the courses of Biomedicine and Pharmacy, Faculty ASCES, Municipality of Caruaru-PE. The survey of IgG antibodies to dengue virus was performed by the Enzyme-Linked Immunosorbent Assay (ELISA). A questionnaire containing questions related to the history of dengue infection, housing and sanitation, was applied and the results were stored and analyzed in Excel. Results: Data were collected and a sample of 179 students. The seropositivity for IgG anti-dengue was 87.1% (156/179). The mean age was 21.5 years and the prevailing gender was female (76.5%). About 33.5% (60/180) responded have had dengue fever, but those who claimed not to have had dengue, 92.1% (58/63) had antibodies to the virus. Conclusion: Due Caruaru an endemic region for dengue, there was already a trend of a high frequency in the evaluated students, which corroborates with other epidemiological studies. dengue control and surveillance activities should be increasingly carried out as well as structural improvements that influenced the living conditions and health.

Keywords: Dengue, seroprevalence, Antibodies.

Introduction
Dengue is a huge public health problem in tropical countries. The environmental conditions is a favorable factor for the development and proliferation of the main vector of the dengue, the aedes aegypti, these regions have the highest incidence of the disease, requiring urgent preventive measures.² There is a necessity data in relation to the seroprevalence of dengue in graduate students, however a study by Malheiros³ determined a prevalence of antibodies to dengue virus in 51.3% (586/1142) of graduate students in the Faculty SenacRio, in Rio de Janeiro.

In virtue of Hemorragic dengue be more consistent after sequential infections.³⁴ In addition it is important that the individual has the knowledge to be aware about the possibility of worsening disease as well as having the information of their immune status which can indicate that it has entered in contact with the virus. Therefore, the objective of this study was to determine the seroprevalence of dengue in the health of graduate students in the city of Caruaru-PE.

Material and Methods
An analytic transversal study was realized which investigated the relation exposing-disease in a determined population in a period of time. The study was runned in the Faculty ASCES located in the city of Caruaru-PE in the period from February to August of the 2015. The target populations were the students of Pharmacy and Biomedicine courses. In addition, the population was chosen by convenience obtaining a total of 179 participants. Initially the students were informed about the research and those who proposed to participate signed a term of consent (TCLE) and answered a questionnaire containing demographic variables, history of dengue infection, housing and sanitation.

The Participants underwent a venous puncture of 3mL of blood realized at the Laboratory School Faculty ASCES. The samples were centrifuged to obtain the serum and were stored in microcentrifuge tubes at -20 °C until the moment to run the enzyme-linked immunosorbent assay (ELISA). The research of IgG antibodies against Dengue virus was accomplished via “kit” commercial ELISA In vitro diagnostic manufacturer, following the manufacturer’s instructions and validation criteria.

Data were stored and analyzed in Excel. Statistical calculations were performed by statcalc in theEpiinfo. The cross-section allowed to estimate the
prevalence of dengue antibodies and an association between some variables and seropositivity for dengue.

The project was approved by the Ethics Committee of the Faculty ASCES under No. 835,870.

**Results**

We collected 179 serum of students enrolled in courses of Biomedicine and Pharmacy of the Faculty ASCES in which only reagents individuals and non-reagents individuals was considered for analysis. Indeterminate results were excluded from the statistical analysis. The average age of students was 21.5 years with a minimum age of 17 years and maximum 42 years, with a predominance of females (74.87%).

Most students showed IgG antibodies to Dengue being 87.10% reagent, 4.5% no-reagents and 8.40% undetermined. Students who responded have not had dengue, in the majority, was reagent for IgG antibodies to Dengue (92.1%). In relation to water storage, 95.7% of students responded store water in containers were positive for IgG antibodies to Dengue.

**Discussion and Conclusion**

The present study observed a high prevalence of students with seroconversion to dengue. These data were higher when compared to those found in the study of Malheiros where detected 51.3% (586/1142) of seropositivity for IgG students complete high school and incomplete higher education. The study shows a higher percentage of female students and a higher frequency of IgG antibodies to dengue in this population, however there was no statistically significant association (p <0.05). These data were similar to other studies in Brazil. Regarding to the age, the study found greater participation and seroprevalence of dengue in students over the age of 20 years but was not found statistical association with seropositivity (p <0.05). Corroborating the findings of Malheiros that evaluated 1261 individuals from 20 to 39 years there were a frequency of 51% seropositivity for IgG for dengue. There is an estimated increase of dengue seropositivity with increasing of age. The seroprevalence to dengue in the evaluated students was high. This result was expected because Caruaru is an endemic region. In the field of infectious diseases, although there are other arboviruses, dengue is still more compromising public health. Dengue control and surveillance activities should be increasingly carried out as well as structural improvements that influence in the living conditions and health.

**References**


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