102 - DENGUE INCIDENCE IN BANDEIRANTES - PR, 2010

VIVIANE MOREIRA SERATO[1],
NATÁLIA MARIA MACIEL GUERRA SILVA[1],
THÁIS REGINA RANUCCI[2],
MARCELO HENRIQUE OTÊNIO[3],
SIMONE C. CASTANHO SABAINI DE MELO[1,2]
[1-] Universidade Estadual do Norte do Paraná – campus Luiz Meneghel,
Setor de Enfermagem, Bandeirantes, Paraná, Brasil
[2-] Universidade Estadual de Maringá, Programa de Pós Graduação em Ciências da Saúde,
Maringá, Paraná, Brasil
[3-] Pesquisador A, EMBRAPA Gado de Leite, Juiz de Fora, Minas Gerais, Brasil
Email: simonecastanho@uenp.edu.br

INTRODUCTION

To dengue is of the most important tropical illnesses of the present time, where the environment, the precariousness of basic sanitation, and the lack of the public politics to control the endemics, contribute to the increase of the illness in the last decades (DIAS, 2006). It is estimated that about 50 to 100 millions of people in the world are infected by the virus of dengue. Out of these, between 250 to 500 thousand evolve for the hemorrhagic form and, subsequently, 5% can evolve for death (ROCHA, 2011).

In the State of Paraná, in the year of 1991, there were the notification of the first cases of the illness, however, autochthonous cases only happened in 1993, provoking, ever since, annually epidemics in the State (PAULA, 2005).

Despite the biological characteristics of this mosquito is well known, the local particularities provide information about the circulation of dengue these days, being essential for the effectiveness of the control measures (COSTA et al., 2008).

Bandeirantes, town of the Pioneer North of Paraná State, as well as others towns, decreed state of alert during the first semester of 2010, as a result of the growing number of dengue cases in this region.

To recognize, notify and analyze the suspicious cases of dengue is of great relevance before the high index of cases, but is also need to prioritize an epidemiological estimate, as a contribution to valid the actions and to evaluate the result of Dengue Control Program (RIBEIRO, 2008).

The objective of the present work was to verify the incidence of dengue notified cases in the town of Bandeirantes - PR, from January, 3rd to July, 3rd, year of 2010.

MATERIAL AND METHODS

The study was taken in the city of Bandeirantes, located in the mid-region of Paraná (Pioneer North), which has a population of 32,182 inhabitants, out of which 28,282 are inhabitants live in the urban zone and 3,800 in the rural zone (BRASIL, 2010). It presents a subtropical humid mesothermal climate, elevated temperatures, with small variations. The period and the precipitation level vary according to the geographical region. The climate is hot and humid, summers with a rain concentration tendency (average temperature over 22° C), winters with frequent little frosts (average temperature below 18° C), without definite dry station with annual precipitation rate of 1.300mm3 (BRASIL1, 2007).

The population of the study was composed by all the people that were notified by the Disease Notification Information System (Sistema de Informação de Agravos de Notificação - SINAN) in the period from January, 3rd to July 3rd, 2010. The Individual Investigation Inquiry (III) and the Individual Notification Inquiry (INI) were analyzed, they were supplied by the Municipal Office of Health from the town of Bandeirantes-PR, 2010.

This research was carried out after the approval of the Committee of Ethics in Research of the Nursing School of UENP-CLM (number 035/2010).

The analysis of the data was inserted at the Microsoft Excel® 2007 program.

RESULTS AND DEBATE

In Bandeirantes – PR, in the first semester of 2010, 639 cases of dengue were notified with an incidence of 193,7/10.000 inhabitants.

The cases were registered through all extension of the town, however the IBC Neighborhood was the more affected by the illness (147 notifications - 23,0%). In this locality there is the highest population density and where there was the greatest number of artificial deposits of water according to a survey promoted by the Municipal Office of Health in 2010. Studies have pointed out that the population density is one of the factors that influence in the dynamic of the transmission of the virus of dengue (DIAS, 2006; TOLEDO et al, 2006), which can be explained by the fact that the contaminated female of Aedes aegypti is capable of, during its blood banquet, infect a great number of people in a short period of time, increasing the probability of this vector easily adopt this behavior.

Cunha et al., 2008 relate that the individual characteristics of the urban centers for the adaptation of dengue are associated to the conditions that favor the reproduction of the vector, such as house aggregations, home sanitation, attributes of the inhabitant for personal and cultural habits, frequently favorable to the infestation.

The greatest index of notifications occurred between the months of March and May with a total of 544 (79%) cases. This was also observed by Otênio et al., 2004 in this town, and by Hino et al. (2010), in the city Ribeirão Preto - SP. The dengue has an outstanding seasonal pattern in Brazil, with a greater circulation of the virus between the months of January and July, due to the environmental conditions observed in that period (BRASIL3, 2010).

In the year of 2009, year that preceded the epidemic related in this study, the index of infestation of the town was of 4,76%. Medium to high infestation levels i.e. higher than 1%, put a locality under a risk of outbreaks or epidemics.

The results found in Bandeirantes show that the association between the number of dengue notifications and the climatic factors, identifying the break when the rain and the temperature contributed to the new cases; they coincide with the

months of Summer, which has the highest values of temperature and rain, and consequently, elevated vectorial indices, which provide the necessary climatic conditions to the occurrence of dengue (figure 1).

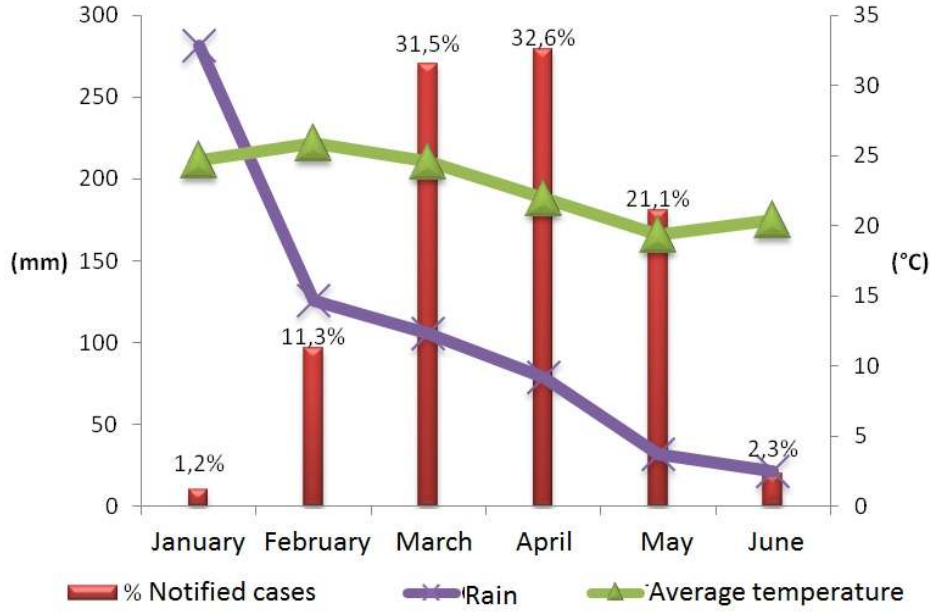

Figure 1 - Distribution of the notified cases of dengue according to the climatic variables, Bandeirantes – PR, 2010.

Ribeiro et al.,2006 studied the association between the number of dengue cases and abiotic factors identifying the break of time when the rain and the temperature contributed to the generation of new cases, providing conditions for occurrence of the illness, considering that the development, without the necessary sanitation structure, possibly influenced in the density of the mosquitoes and in the incidence of the disease, and contributed for the dispersion of the mosquito and dissemination of the illness, in a very similar way to the climatic facts that influence in the dissemination of dengue in Bandeirantes - PR.

Out of 639 cases notified in this I study, 58% were women. The same characteristic was found in the study of Cunha et al, 2008 e Duarte; França, 2006. Bastos, 2004 emphasizes that the predominance of contaminated women is due probably because these remain for longer period of times at home and by the fact that the transmission occurs mainly in the residences and perdomiciles, or because they are more likely to seek the health care service compared to men.

Regarding the professions, there was a predominance of students, housewives, pensioners and domestics, with a total of 227(35,6%) of the notifications of dengue. Based on the studies of Cunha et al.,2008 it is observed that one of the explanations of certain professions have a greater probability of acquiring dengue would be related to the greater permanence of some classes in the intradomicile and/or peridomicile, locals where the transmission of dengue predominantly occurs.

The distribution of the cases of dengue occurred in all the age groups, however the one that presented the highest percentage was 21 to 40 years old (35,7%), similar characteristic observed in the study of Cordeiro, 2008.

Regarding to the school level of the patients notified, there was a predominance of 30.3% of those who had not concluded fundamental education.

The study of Gonçalves (2004) points that there is not correlation between the infection by dengue and the school level, which indicates that the risk of presenting the illness is independent of the level of instruction, however the Epidemiological Information pointed that people with less of eight years of education tend to estimate less health care and also understand less the preventive orientation offered by the campaigns (BRASIL4, 2003).

The cases of dengue have its final classification through laboratory parameters or clinical-epidemiological criteria (BRASIL2, 2007). Out of the 639 cases notified of in this study, 344 (53,8%) were confirmed by laboratory exams (figure 2).

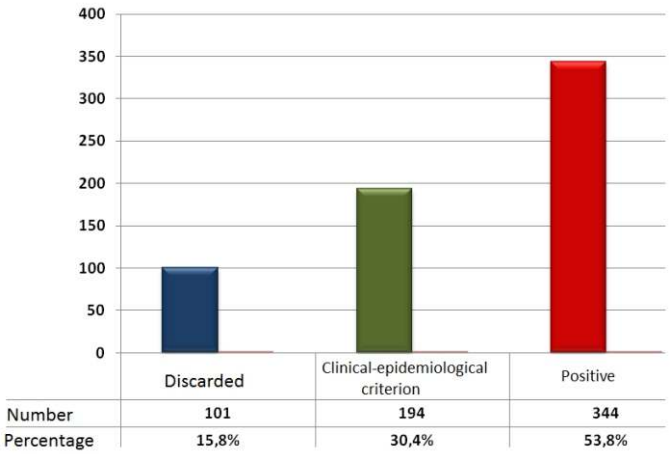

Figure 2 - Distribution of dengue notified cases according to final diagnosis, Bandeirantes – PR, 2010.

The clinical-epidemiological criteria are of great importance for the epidemiological vigilance, because they allow evaluating the magnitude of the event, monitoring and adopting measures of control, conferring greater agility to the diagnosis process, reducing the operational costs of the laboratory and releasing it to the performance of other activities (BRASIL2, 2007).

The search for the health service occurred in a short period of time; in 48% of the cases it happened immediately after the appearance of the symptoms of the illness (less than seven days) (Figure 3).

The initial diagnosis of dengue is clinical and the early assistance allows to know the real time situation of the disease, in order to perform its control and it also reduces the morbi-mortality. Corrêa e França, 2007 relates that the detection and the corroboration of the cases early, is a strategy that should be maintained and extended for regions with favorable conditions to the occurrence of epidemics and assumed like a continuous activity by the units of health, because even during inter-epidemic periods, the virus circulates among the population.

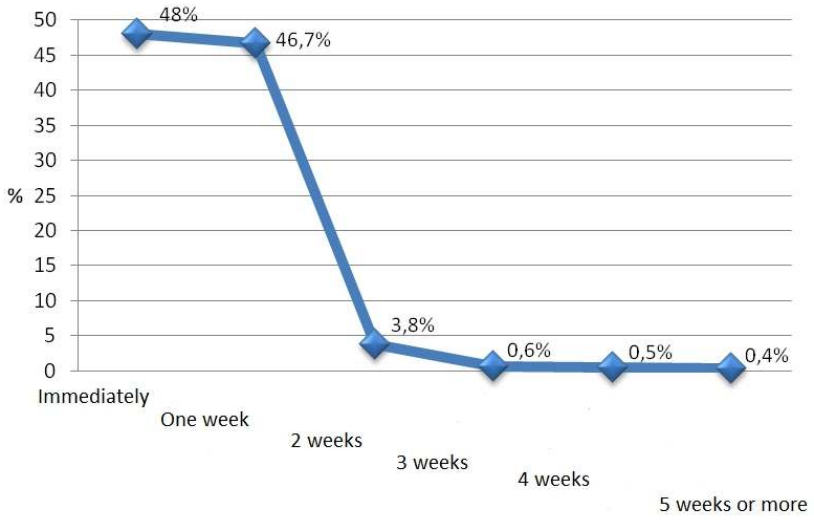

Figure 3 - Distribution of the notified cases of dengue between the date of the first symptoms and the date of notification, Bandeirantes – PR, 2010.

CONCLUSION

The dengue is an illness that affects the entire world, therefore, it is needed the participation of the population together with the public organs, to control its dissemination and to contribute for the achievement of new forms of reducing its infestation and rates of incidence.

It becomes evident with the studies that SUS has been installing epidemiological tool kits for the accompaniment of the illness, however, these facts should reflect in public politics in all municipal, state and national levels, overstepping this matter to media vehicles, reflecting in environmental sanitation and conservation of the quality of life of the population.

Illnesses with strong environmental interference should be treated in public scale directly, with actions that involve, for example, trash collection, control of sources, adequate handling of the sewage and trash, commitment of the populations in the preservation of cleanness and conservation of the rural and urban environment.

To consider the peculiarities of the incidence of dengue is prominent to direct the appropriate measures to control the illness, improving, therefore, the health of the population.

REFERENCES

BRASIL, Instituto Brasileiro de Geografia e Estatística - IBGE. **População do município de Bandeirantes - PR – Censo 2010.** Disponível em: <http://www.ibge.gov.br/> Acesso em: 28/10/2011

BRASIL[1]. **Plano Diretor de uso e Ocupação do Solo Urbano – Bandeirantes – PR**, 2007.

BRASIL2. **Fundação Nacional de Saúde. Guia de Vigilância Epidemiológica:** (Série A. Normas e Manuais Técnicos), 2007. 816 p.

BRASIL3. **Fundação Nacional de Saúde. Informe Epidemiológico da Dengue: Análise de situação e tendências, 2010. 42p.** Disponível em:<http:// portal.saude.gov.br >. Acesso em: 28/10/2011.

BRASIL4. **Fundação Nacional de Saúde. Informe epidemiológico da dengue em Teresina - PI, 2003.**

BASTOS, M. S. **Perfil soroepidemiológico do dengue diagnosticado na Fundação de Medicina Tropical do Amazonas (1998-2001).** Manaus. 2004. 85p. Tese (Mestrado em Saúde Pública) - Universidade Federal do Amazonas.

CORDEIRO, M. T. **Evolução da dengue no estado de Pernambuco, 1987-2006: epidemiologia e caracterização molecular dos sorotipos circulantes**. Recife. 2008. 226p. Tese (Doutorado em Saúde Pública) - Fundação Oswaldo Cruz.

CORRÊA, P. R. L.; FRANÇA, E. Dengue hemorrágica em unidade de referência como indicador de sub-registro de casos no Município de Belo Horizonte, Estado de Minas Gerais, Brasil, 1998. **Epidemiologia e Serviços de Saúde**, Brasília, v.16, n.3, p. 175-184, jul./set. 2007.

COSTA, F.S; et al. Dinâmica populacional de Aedes aegypti (L) em área urbana de alta incidência de dengue. **Revista da Sociedade Brasileira de Medicina Tropical,** Uberaba, v.41, n.3, p.309-312, maio/jun. 2008.

CUNHA, M.C.M. da.; et al. **Fatores associados à infecção pelo vírus do dengue no Município de Belo Horizonte, Estado de Minas Gerais, Brasil: características individuais e diferenças intra-urbanas.** Epidemiologia e Serviços de Saúde, Brasília, v.17, n.3, p. 217-230, set. 2008.

DIAS, J.P. **Avaliação da efetividade do Programa de Erradicação do Aedes aegypti. Brasil, 1996 a 2002.** Salvador. 2006. 80p. Tese (Doutorado em Saúde Pública) - Universidade Federal da Bahia.

DUARTE, H.H.P.; FRANÇA, E.B. **Qualidade dos dados da vigilância epidemiológica da dengue em Belo Horizonte, MG. Revista de Saúde Pública,** São Paulo, v.40, n.1, p.134-142, jan./fev. 2006.

GONÇALVES NETO, V.S.; REBÊLO, J.M.M. **Aspectos epidemiológicos do dengue no município de São Luis, Maranhão, Brasil, 1997-2002.** Cadernos de Saúde Pública, Rio de Janeiro, v.20, n.1, p.1424-31, set./out. 2004.

OTENIO, M.H. ; et al. **Controle da dengue em Bandeirantes, Paraná: importância da continuidade das ações preventivas. Salusvita, Bauru,** v. 23, n. 1, p. 47-53. 2004.

PAULA, E.V. de. **Dengue: Uma análise climato-geográfica de sua manifestação no Estado do Paraná (1993-2003).** Curitiba. 2005. Dissertação (mestrado em Geografia) – Universidade Federal do Paraná.

RIBEIRO, A.; et al. Associação entre incidência de dengue e variáveis climáticas. **Revista de Saúde Pública,** São Paulo, v.40, n.4, p. 671-676, ago. 2006.

RIBEIRO, P. da. C. Perfil clínico-epidemiológico dos casos suspeitos de Dengue em um bairro da zona sul de Teresina, PI, Brasil. **Revista Brasileira de Enfermagem,** Brasília, v.61, n.2, p. 227-232, mar/abr. 2008.

ROCHA, R.C. **Epidemiologia da dengue na cidade de Rio Branco – Acre, Brasil no período de 2000 à 2007. São Paulo.** 2011. 197p. Tese (Doutorado em Saúde Pública) – Universidade de São Paulo.

TOLEDO, A.L.A. de.; et al. **Confiabilidade do diagnóstico final de dengue na epidemia 2001-2002 no município do Rio de Janeiro, Brasil.** Cadernos de Saúde Pública, Rio de janeiro, v.22, n.5, p. 933-940, maio. 2006.

Simone C. Catanho Sabaini de Melo
Email: simonecastanho@uenp.edu.br
Endereço: Universidade Estadual do Norte do Paraná
Campus Luiz Meneghel
Setor de Enfermagem
BR, 369 km 54Bandeirantes –PR
CEP – 86360-000
Fone: 43- 35428044 / 43- 99163824

DENGUE INCIDENCE IN BANDEIRANTES - PR, 2010

ABSTRACT

The dengue is one of the most important tropical illnesses of the present time, where the environment, the precariousness of basic sanitation and the lack of the public politics to control the endemics, contribute for the increase of the illness in the last decades. The objective of this work was to verify the incidence of dengue notified cases in the town of Bandeirantes – PR, from January to July of 2010. For information gathering it was utilized the Individual Investigation Inquiry (III) and the Individual Notification Inquiry (INI). In the period of study there were 639 cases notified with incidence of 193,7/10.000 inhabitants, out of which 58% were female sex, in all age groups. Between the professions, 35.6% were students, housewives, pensioners and maids. The cases notified were distributed almost through the town, however most of the cases were at the IBC Neighborhood (147 cases - 23.0% of the total of notifications). The higher incidence occurred between the months of March and May. The average temperature was 22,8°C and the average precipitation level was of 107.4 mm, favorable climatic conditions to the occurrence of dengue. 84.2% of the cases were positive and only 15.8% discarded. The search of the patient for the health care service occurred in a short period of time; in 48% of the cases it occurred immediately after the appearance of the symptoms of the illness (less than seven days). To ponder the peculiarities of the incidence of dengue is prominent to direct appropriate measures to the control the illness, improving the level of health of the population.

KEYWORDS: dengue, incidence, notifications.

INCIDENCE DE CAS DE DENGUE DANS LA VILLE DE BANDEIRANTES, DANS L'ETAT DU PARANÁ, 2010

Dengue est l'une des plus importantes maladies tropicales de nos jours, où l'environnement, la précarité de l'assainissement et le manque de politiques publiques visant à lutter contre les maladies endémiques, contribuent à la dissémination de la maladie dans les dernières décennies. L'objectif de cette étude est de vérifier l'incidence des cas de dengue dans la ville de Bandeirantes - PR, de janvier à juillet 2010. Pour recueillir les données, il a été utilisé Formulaire Individuel d'Investigation (FII) et le Formulaire Individuel de Notification (FIN). Pendant la période d'étude 639 cas ont été relevés avec une incidence de 193,7 / 10 000 habitants, où 58% est du sexe féminin, touchant tous les groupes d'âge. Parmi les professions, on souligne les étudiantes, les femmes au foyer, les retraitées et les femmes de ménage qui sont au total 35,6%. Les cas signalés ont touché tous les lieux presque de la ville, mais la zone la plus touchée a été le village IBC (147 cas - 23,0%). L'incidence la plus élevée a eu lieu entre les mois de mars à mai. La température corporelle moyenne était de 22,8 ° C et la moyenne des pluies était 107.4 mm, les conditions climatiques favorables pour l'incidence de la dengue. A la fin du traitement, on a signalé 84,2% positifs et 15,8% négatifs. La plupart des patients est allée immédiatement à un établissement de santé tout de suite après l'apparition des symptômes, 48% des cas (moins de sept jours). Songer à certaines particularités de l'incidence de la dengue est important pour orienter les mesures appropriées pour, ainsi, contrôler la maladie et améliorer la santé de la population.

MOTS-CLÉS: dengue, incidence, notifications.

INCIDENCIA DE CASOS DE DENGUE EN BANDEIRANTES - PR, 2010

RESUMEN

La dengue se constituye en una de las más importantes enfermedades tropicales de la actualidad, donde el ambiente, la precariedad de saneamiento básico y la carencia de las políticas públicas de control de endemias, contribuyen para el aumento de la enfermedad en las últimas décadas. El objetivo de este trabajo fue verificar la incidencia de casos notificados de dengue en el municipio de Bandeirantes – PR, de enero hasta julio de 2010. Para colecta de datos fue utilizada la Ficha Individual de Investigación (FII) y la Ficha Individual de Notificación (FIN). En el período de estudio fueran notificados 639 casos con incidencia de 193,7/10.000 habitantes, siendo 58% del sexo femenino, acometiendo todas las franjas etarias. Entre las profesiones se destacaron estudiantes, amas de casa, jubilados y empleadas de hogar totalizando 35,6% de estas. Los casos notificados fueran distribuidos en casi toda la extensión del municipio, pero la área más atingida fue la Vila IBC (147 casos - 23,0% del total de notificaciones). La mayor incidencia ocurrió entre los meses de marzo a mayo. La temperatura media fue de 22,8°C y la media de precipitación pluviométrica fue de 107,4 mm, condiciones climáticas propias para ocurrencia de dengue. En el encerramiento de los casos 84,2% fueran positivos y solamente 15,8% descartados. La procura del paciente al servicio de salud ocurrió en un corto espacio de tiempo, siendo que en 48% de los casos fueran immediatamente al aparecimiento de las sintomatologias de la enfermedad (menos de siete días). Ponderar acerca de las peculiaridades de la incidencia de dengue es relevante para encaminar medidas apropiadas al control de la enfermedad, mejorando así la salud de la población.

PALABRAS CLAVE: dengue, incidencia, notificaciones.

INCIDÊNCIA DE CASOS DE DENGUE EM BANDEIRANTES - PR, 2010

RESUMO

A dengue constitui-se uma das mais importantes doenças tropicais da atualidade, onde o ambiente, a precariedade de saneamento básico e a carência das políticas públicas de controle de endemias, contribuem para o aumento da doença nas últimas décadas. O objetivo deste trabalho foi verificar a incidência de casos notificados de dengue no município de Bandeirantes – PR, de janeiro a julho de 2010. Para coleta de dados foi utilizada a Ficha Individual de Investigação (FII) e a Ficha Individual de Notificação (FIN). No período de estudo foram notificados 639 casos com incidência de 193,7/10.000 habitantes, sendo 58% do sexo feminino, acometendo todas as faixas etárias. Entre as profissões se destacaram estudantes, donas de casa, aposentados e domésticas totalizando 35,6% destas. Os casos notificados foram distribuídos em quase toda a extensão do município, porém a área mais atingida foi a Vila IBC (147 casos - 23,0% do total de notificações). A maior incidência ocorreu entre os meses de março a maio. A temperatura média foi de 22,8°C e a média de precipitação pluviométrica foi de 107,4 mm, condições climáticas propícias para ocorrência de dengue. No encerramento dos casos 84,2% foram positivos e apenas 15,8% descartados. A procura do paciente ao serviço de saúde ocorreu em um curto espaço de tempo, sendo que em 48% dos casos foi imediatamente ao aparecimento das sintomatologias da doença (menos de sete dias). Ponderar a cerca das peculiaridades da incidência de dengue é relevante para direcionar medidas apropriadas ao controle da doença, melhorando assim a saúde da população.

PALAVRAS-CHAVE: dengue, incidência, notificações.