

PREVALENCE OF GASTRO-INTESTINAL AND RESPIRATORY INFECTIONS IN LAKHIMPUR DISTRICT OF ASSAM, INDIA

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ABSTRACT

This study was carried out at Lakhimpur district in Assam, India for assessing the trend of gastroenteritis and respiratory disease. During the study, a large numbers of acute respiratory infections/influenza like illness (ARI/ILI) cases were observed which were closely followed by acute diarrhoea and bacillary dysentery. Most of the ARI/ILI cases were reported from Bihpuria block public health centre (BPHC). Incidence of acute diarrhoea and bacillary dysentery cases were high at Boginodi area. Beside this, high incidence of enteric fever cases was also reported in Lakhimpur district. The overall incidence was higher from May to June.

Keywords: Acute diarrhoea, acute respiratory infections, bacillary dysentery, Prevalence

INTRODUCTION

Lakhimpur district of Assam has a history of emerging different diseases. The first outbreak of Japanese encephalitis was reported in 1978 from Lakhimpur district of Assam (<http://www.indianpediatrics.net/sep1991/1029>). In 2006, an epidemic of malaria has also been taken place in Lakhimpur district of Assam where almost 200 patients expired due to *P.falciparum* infection (The Hindu, 5th May). Many major outbreaks of the mushroom poisoning and food poisoning have also occurred in this area (Sharma J et al., 2013a; Sharma J et al., 2014). Beside this, respiratory and gastro-intestinal diseases occur frequently throughout the district.

Acute respiratory infections (ARIs)/Influenza like illness (ILIs) are classified as upper respiratory tract infections (URIs) or lower respiratory tract infections (LRIs). It is not restricted to the respiratory tract and has a systemic effect because of probable extension of infectivity or microbial toxins, inflammation, and reduced lung function. Water borne diseases prevailing in this area include acute diarrhoeal disease, bacillary dysentery, viral hepatitis, typhoid etc. These are common illness which is not only caused solely by waterborne pathogens but also through poor hygiene with fecal-oral transmission. In terms of socioeconomics, these flood-prone areas of Lakhimpur are remote and underdeveloped. The ethnic communities in remote and isolated pockets prone to high flood risks have lived with and adapted to floods and associated water-induced hazards (Sharma J et al., 2013; Sharma J et al., 2014a; Sharma J et al., 2014b).

It was believed that analysis of all the disease related information collected from Lakhimpur district of Assam in terms of place and time would provide useful information to find out the high risk areas and to take apposite measures to control any epidemic in near future. Keeping in observation of the above information a study was carried out for accessing the trend of Gastro-intestinal and Respiratory Infections in Lakhimpur district of Assam, India.

Materials and methods

Study area

According to the 2011 census Lakhimpur district has a population of 1,040,644. It is situated on the North East corner of Assam. The

district lies between 26°48' and 27°53' northern latitude and 93°42' and 94°20' east longitude. The district has six public health centres at block level. These includes Dhalpur BPHC (population covers: 158896), Bihpuria BPHC (population covers: 217872), Nowboicha BPHC (population covers: 251830), Boginodi BPHC (population covers: 259152), Dhakuakhana BPHC (population covers: 121544) and Ghilamora BPHC (population covers: 64464). There are a total of 28 numbers of reporting units which includes community health centre, Mini PHC, State dispensaries and civil hospital, where the people were get benefit of treatment. Beside this there are mainly five private hospitals where most of the patients were attended for treatment purpose.

Case definition

A person with sudden onset of fever >38°C and cough or sore throat were initially diagnosed as a case of acute respiratory infection/influenza like illness (WHO recommended surveillance standard). Similarly for each disease, a standard acceptable case definition was followed by all the clinician positioned in respective health institutions.

The disease history and clinical sign and symptoms of each patient with different ailments attended in nearby health centers in Lakhimpur district of Assam were entered by the respective medical officers in their OPD register. Similarly, in each of the health institutions situated at block level follow the same criteria. After ending of every week all the disease related information were compiled separately based on the provisional diagnosis made by the medical officers. The data containing the information of different diseases was obtained in every Wednesday in district headquarters from periphery level. During the year 2013, the information of different diseases reported by the Medical Officers in their weekly provisional diagnosis form to district health authority were analyzed in terms of time and place to come across the disease trend. Patients of all age groups and both the sexes were included in our study.

RESULTS

After the collection, compilation and analysis of all the disease related information obtained from the entire areas of Lakhimpur district in Assam, it was observed that ARI/ILI cases were mostly prevalent and found in all areas with high incidence rate.

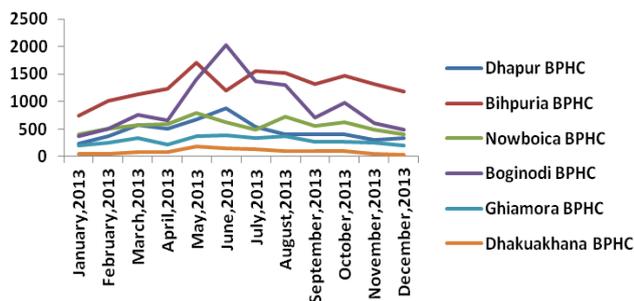


Fig. 1: Distribution of ARI/ILI cases in term of time and place in 2013

“Months” in x-axis and “Number” in y-axis

In year 2013, total 48876 ARI/ILI cases were reported in the district. Most of ARI/ILI cases were observed from Bongalmora area under Bihpuria (Figure 1). The rate of incidence reached on alarming level during the month of May to June. The incidence of ARI/ILI cases were higher in second quarter of the year closely followed by third quarter of the year (Figure 1).

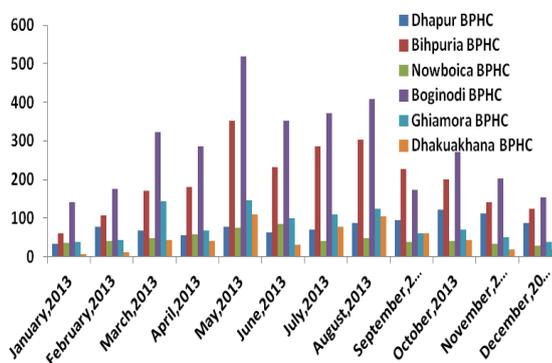


Fig.2: Numbers of Acute diarrhoeal disease cases (month wise and block wise)

“Months” in x-axis and “Number” in y-axis

A total of 9699 acute diarrhoeal disease cases and 3899 bacillary dysentery cases were found during the year in Lakhimpur district of Assam. Boginodi area shares approximately 38% of total diarrhoeal as well as dysentery cases reported in Lakhimpur district (Figure 2 & 3).

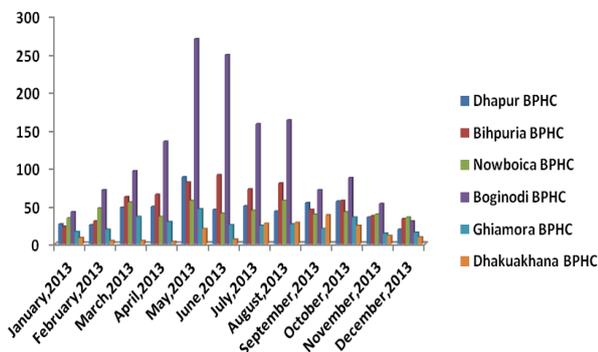


Fig. 3: Numbers of bacillary dysentery cases (In terms of time and place analysis)

“Months” in x-axis and “Number” in y-axis

DISCUSSION

High incidence of ARI/ILI cases in this area indicating that home dampness to be associated with increased respiratory symptoms in

case of children. Several studies describe an association of cigarette smoking or exposure to environmental tobacco smoke with the occurrence and severity of ARTI (Koch A et al., 2003; Hajnal BL et al., 1999; Aronson MD et al., 1982; Finklea JF et al., 1971). Smoking is believed to exacerbate respiratory diseases by harming respiratory defense mechanisms. Again, high prevalence of water borne disease has also been observed during the study period. Prevalence of diarrhoea and dysentery was elevated in the month of May and June. This is because the microorganisms grow faster in the warm summer months. Most food borne bacteria grow fastest at temperatures from 90 to 110 °F. Bacteria also need moisture to flourish, and summer weather is often hot and humid.

During 2013, a major outbreak of Acute diarrhoeal diseases occurred with an overall attack rate of 1.47% and case fatality rate of 3.2% in Kherajkhat area of Lakhimpur district due to consumption of proshad which was thought to be infected (Sharma J., 2014a; Sharma J et al., 2013b). In this regards it may be believed that not only the water contamination but also improper cooking, uncleanness may also be the reason of diarrhoea in this area.

CONCLUSION

Our finding showed high incidence of Gastro-intestinal and Respiratory infections among the populations in Lakhimpur district of Assam. Adequate surveillance and continuous analysis of disease trend is needed in this aspect for early detection of an impending outbreak.

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