

Profile of Chickenpox Cases in J.N. Institute of Medical Sciences, Imphal: A Descriptive Study.

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ABSTRACT

Background: Frequent outbreaks of chickenpox are reported from other parts of India in the recent past. But data regarding it in the North-Eastern parts of the country is non-existent. Hence, the current study was taken up to study the profile of chickenpox cases in the state of Manipur. **Methods:** Secondary data for the period 2006-15 for new chickenpox cases who attended the outpatient ward of the Dermatology department of J.N. Institute of Medical Sciences (JNIMS), the only state-run teaching medical institution were analysed retrospectively for their background characteristics and time of occurrence. **Results:** Chickenpox cases comprised 0.61% of all the OPD cases. The mean age of cases was 13.23 (SD±8.33) years. The disease was most common in the age-group of 5-15 years (49.4%). Case attendance was highest during the spring season followed by the wintry months. Cases streaked in throughout the year although it was the least during the months of August, September and October. There was slight male preponderance for the cases (1.24:1). **Discussion:** The proportion of cases reported was lesser than reports made by other researchers in outbreak situations. The mean age of the cases was slightly on the higher side if compared to previous study findings. The present study finding that cases appeared more during the spring season and the wintry months was also comparable with other study findings made by others in the country. **Conclusion:** A varicella sero-conversion study might be taken up across the state to assess the risk of impending outbreaks of chickenpox.

Keywords: Chickenpox, Outbreak, Profile.

INTRODUCTION

Varicella is a disease caused by Varicella Zoster Virus (VZV). Primary Infection by the virus causes chickenpox. It is an acute, highly contagious disease with worldwide distribution. It primarily affects young children, the highest prevalence being in pre-school and school-aged children.^[1] It tends to be more severe in adults.^[2-6] It is usually a benign childhood disease, and is rarely noted as a public health problem. But it can be severe and even fatal in otherwise healthy children (<1 out of every 10,000 cases).^[7]

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In India, there appears to be some seasonal variation in the occurrence of acute cases of varicella. A number of studies found the cases to peak during the cooler months while dropping off in the summer months.^[8-11] A significant proportion of adolescents and adults in this country are still susceptible to

varicella.^[12] In an unvaccinated population like India, the chance of having outbreaks and epidemics always looms large. This is aggravated by the fact that the secondary attack rate of the infection can be as high as 72%.^[13] Resultantly, frequent outbreaks of chickenpox cases are reported from many parts of the country in the recent past.^[14-17] Data regarding chickenpox cases are hardly available from the North-Eastern part of the country. Hence, it was felt important to take up the current study.

Aims:

To study the profile of chickenpox cases in J.N. Institute of Medical Sciences (JNIMS), the only state-run medical institute in the state of Manipur.

MATERIALS AND METHODS

The study was an observational analytical study. Secondary data regarding new cases of chickenpox who attended the out-patient ward of the Dermatology department of the single state-run teaching medical institution (J.N. Institute of Medical Sciences, Imphal) was collected from the register maintained there. Retrospective data for the last 10 years (2006-2015) were analysed for

background characteristics like age, sex, residence etc. and month and year of attending the hospital. Identifiers like names were not used for analysis, only the numbers were taken into consideration. SPSSv22 was used for data analysis. Descriptive statistics like mean, median, percentage and standard deviation were used for data presentation.

RESULTS

The total number of new OPD cases in the Dermatology Department of JNIMS during the period 2009-15 was 227,118. Of this total, 1378 were new cases of chickenpox. Thus, the proportion of chickenpox cases out of all the OPD cases was 0.61%. The year-wise proportions of chickenpox cases out of all OPD cases were as shown in [Table 1].

Table 1: Chickenpox cases year-wise.

Years	Total OPD cases	Chickenpox cases	Percentage
2006	12,996	127	0.98
2007	21,458	102	0.48
2008	20,142	190	0.94
2009	27,833	109	0.39
2010	18,083	145	0.94
2011	18,705	109	0.39
2012	27,065	105	0.39
2013	22,079	181	0.82
2014	31,755	137	0.43
2015	27,072	173	0.64
Total	227,188	1,378	0.61

The proportion of chickenpox cases was found to be relatively higher in the years 2006 (0.98%), 2008 (0.94%), 2010 (0.80%) and 2013 (0.82%).

The mean (SD) and the median age of all the cases were 13.23 (± 8.33) years and 12 years respectively. The youngest case was a child aged two months only, whereas, the oldest case was a man aged 60 years. The year-wise mean age (SD) of the chickenpox cases were as given in [Table 2].

Table 2: Year-wise mean age of chickenpox cases

Years	Mean age of chickenpox cases (in yrs.)	SD
2006	12.06	± 7.22
2007	13.65	± 8.88
2008	12.21	± 6.74
2009	14.25	± 9.35
2010	14.95	± 8.69
2011	12.30	± 7.54
2012	12.59	± 8.77
2013	13.04	± 7.69
2014	13.26	± 8.77
2015	14.15	± 9.52

The mean age of the chickenpox cases was found to be comparable across the last ten years of the study period.

The age-distribution of the chickenpox patients were as shown in [Table 3].

Table 3: Age-distribution of chickenpox cases.

Age-group	No. of chickenpox cases	Percentage
< 5	177	12.8
5 - <10 yrs.	340	24.7
10 - <15 yrs.	340	24.7
15 - <20 yrs.	235	17.1
20 - <25 yrs.	158	11.5
25 yrs.& above	129	9.4

Almost half of the chickenpox cases were found in the age-group of 10-15 years (680, 49.4%). One-eighth of the cases (177, 12.8%) were children under the age of five years. It was rare among the adults aged 25 years or more (129, 9.4%).

[Figure 1] shows the distribution of chickenpox cases during the different seasons of the year.

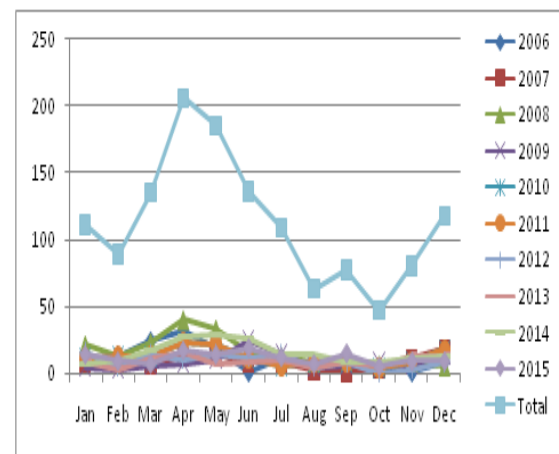


Figure 1: Seasonal distribution of chickenpox cases

Chickenpox cases were found in all the months of the year in the last 10 years. On the average, the chicken pox cases seemed to peak in the month of April followed by a lower peak in the months of December and January. Cases were the least during the months of August, September and October. This pattern could be observed throughout the study period.

Out of all the 1,378 cases of chickenpox cases, 616 were females. Thus, the male: female ratio was 1.24:1. More than half of the cases belonged to the rural areas (793, 57.5%); the remaining 585 (42.3%) were from the urban areas.

DISCUSSION

The number and proportion (0.61%) of chickenpox cases reported from the study area were lesser than the number reported by other researchers from across the country during outbreak situations.^[8-10,16-17] The mean age of the chickenpox cases (13.23 yrs.) was comparable to study findings reported by Wharton M et al^[1]. But was slightly on the higher side if compared to cases reported in the country in

the recent past.^[13,14] The majority of the cases (49.4%) belonged to children and adolescents aged 5-15 years.

Chickenpox in the state of Manipur was a regular phenomenon as cases used to streak in throughout all the seasons of the year. Outbreak situations occurred only during spring and the wintry months. This finding was also compared with other study findings from other parts of the country.^[8-11,16-17] There was a slight preponderance of the males. No differentiation of the cases could be made based on the residence of the cases. Both urban and rural areas were almost equally affected.

CONCLUSION

Analysis of the retrospective data maintained for the period 2009-15 in the outpatient ward of the Dermatology Department of JNIMS, the single state-run teaching medical institution showed that chickenpox cases comprised nearly 1% of all the outpatient cases. The mean age of the cases was 13.23 years. The youngest case reported was an infant of two months only. Children and adolescents of the age-group 5-15 years comprised almost half of the cases. The reporting of cases was highest during the spring season followed by the wintry months of December and January. Cases drastically reduced during the warmer months of August, September and October. Among the cases, there was a mild male preponderance (1.24:1). Both the urban and rural areas had an almost similar number of cases.

A varicella sero-conversion study might be taken up across the state to assess the risk of impending outbreaks of chickenpox. Based on its finding, necessary preventive measures might be taken up to ward off chickenpox outbreaks and epidemics.

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