



## Research Article

### CHICKENPOX, TRADITIONAL INHIBITION AND TREATMENT NEGLECTING - A STUDY IN ASSAM, INDIA

Mridul Malakar <sup>1\*</sup>, Manjit Choudhury <sup>2</sup>, Garima Jaiswal <sup>3</sup>, Sumit Gupta <sup>4</sup> and Pankaj Kalita <sup>5</sup>

<sup>1</sup>District Surveillance Unit, O/o JDHS, Uzan Bazar, Guwahati, Kamrup-M, Assam, India

<sup>2</sup>PhD Scholar, Himalayan University, Itanagar, Arunachal Pradesh, India

<sup>3</sup>PhD Scholar, Monad University, Hapur, UP, India

<sup>4</sup>District Surveillance Unit, DPHL, O/o JDHS, Nalbari, Assam, India

<sup>5</sup>Department of Biophysics, Pub Kamrup College, Baihata Chariali, Kamrup, Assam, India

\*Corresponding Author Email: mridulmalakar1@gmail.com

Article Received on: 19/02/19 Approved for publication: 28/03/19

**DOI: 10.7897/2230-8407.1005174**

#### ABSTRACT

Chickenpox is the viral disease caused by varicella zoster virus (VZV). The chickenpox patients represent mainly fever, maculopapular vesicular rash with headache, body ache, fatigue, irritability etc. As this disease spread by air droplet and skin/blister contacts the disease spread very quickly and easily. Our study tried to check epidemiology, encourage for medical treatment and full awareness for chickenpox. After awareness meeting blood samples were collected and obtained serum from different affected districts of Assam. Blood samples were tested for VZV. The results showed that all age groups and both sexes were affected. 49.12 % female and 50.88 % male were affected, and all were without immunization. Maximum cases were reported in the month of December followed by May. Traditional believes; quack preferences, Communication routes, living behavior etc were the main cause found during our study. Awareness meetings were organized in the affected areas. Patients were convinced for medical treatment after awareness and special counseling. To control the disease govt., NGOs, Organizations etc must take necessary steps for immunization, living standard including water, road, education etc., routine counseling and awareness.

**Keywords:** VZV, maculopapular, awareness, immunization, education.

#### INTRODUCTION

Chickenpox is the one of the most common neglected disease of Assam, India. Children and Immuno compromised patients are the high risk groups for chickenpox. There is the probability of secondary bacterial infections after chickenpox too<sup>1</sup>. This leads to the complications. The worldwide history of chickenpox burden showed 11,200 deaths in 1990 and 6,800 deaths in 2010<sup>2</sup>. The virus may remain latent in the ganglion and reactive again based on age, immunity (acquired, inherited or iatrogenic) etc and which leads to zoster<sup>3</sup>; where declining cellular immunity is the one of the main factor. That is why the study, treatment, prevention, awareness of chickenpox is very important for public health.

As immune compromised patients are the high risk group for chickenpox there are possibilities of HIV or AIDS, Tuberculosis and others. Actually Human Immunodeficiency Virus (HIV) is the virus which attacks the immune cells resulting immunosuppression. Due to decreasing immunity as well as transmission routes (air, aerosols, skin contact with lesions) of Chickenpox HIV/AIDS patients may get chickenpox infections easily. Different studies reported different sero positivity of HIV in chickenpox patients during their studies. Baghel N *et al.*, reported 33.6 % HIV positivity whereas Laxmisha C *et al.*, reported 35 % HIV positivity in chickenpox patients<sup>4</sup>. Again there is various evidence of persistent of VZV DNA in immune cells either with HIV sero positive or negative<sup>5</sup>. So, there is possibilities of tuberculosis too as this is too airborne. Same way

other bacterial/viral infections risk also increases. Chickenpox is the disease which spread from two days before onwards since rash (Image 1) appears<sup>6</sup>. So, unaware people from same locality are raising the risks. This indicates the importance of chickenpox in public health.

#### MATERIAL AND METHODS

The study was conducted in various districts of Assam, India from where the cases of chickenpox were reported namely Dhuburi, Kokrajhar, Goalpara, Nalbari, Udalguri, Kamrup, Kamrup-Metro, Morigaon and Nagaon. Field investigations were done in all affected area. All the cases clinically/provisionally diagnosed as chickenpox by physician were included for our study. Blood samples were collected and transported to the laboratory at 2-8°C (Image 2). Serum samples obtained from blood and tested for VZV IgM ELISA (EUROIMMUN). The manufacturer studied with 181 (one hundred eighty one) numbers patients samples and reported 100 % specificity and 100 % sensitivity (Order No. EI 2650-9601 M). Group counseling, awareness meeting, medical camps were done to control and prevent transmission.

All the patients were informed about the study and test. Blood samples were collected from the patients only after consent. The study was approved by the ethical board.



Image 1: Chickenpox Positive Patient from Rajabari (Kamrup-M)



Image 2: Blood sample collection and affecting places communication road situation during investigation of authors

## RESULTS

The study results showed that maximum cases were reported in the month of December with sudden decreasing (Figure 1). The cases were again starting to increase since May onwards. All the age groups were affected of both sexes, but the maximum cases were in between 6 years to 15 years (Figure 2). Positivity rate was found slightly higher in male in comparison with female. 50.88 % (58/114) male were found positive round the year whereas female positivity rate was 49.12 % (56/114). All the cases (100 %, 114/114) were with rash and fever (mild temperature to severe). All the cases were belonging to BPL (Below the Poverty Line) family to lower middle class family.

It was observed during study that none of the cases were immunized for VZV and history of contact with positive case was observed. 70.17 % (80/114) positive cases preferred traditional remedies as per traditional quack advise and refused medical treatment, refused to visit health institute and refused for blood collection before counseling. All the 100 % (114/114) positive cases accept the medical treatment, allowed to draw blood for test either after group counseling or individual counseling.

No co-infection with other virological, bacteriological or mycological organism was suspected by the treating physicians.

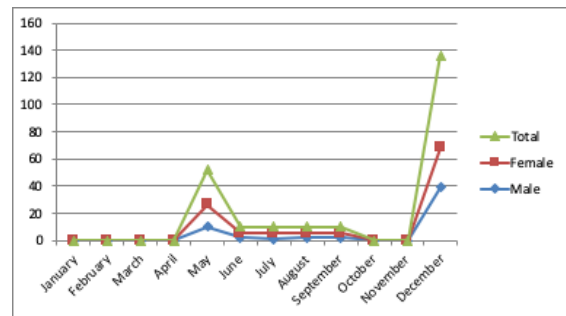


Figure 1: Month wise chickenpox trends with sex ratio

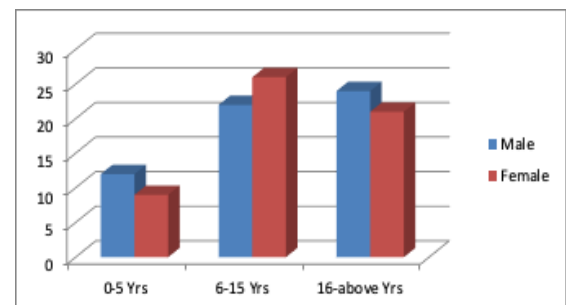


Figure 2: Affecting age/sex group's distribution

## DISCUSSION

Due to traditional inhibition patients goes to folk medicines and remedies instead of medical treatment. This is only because of lack of education or lack of awareness about the disease. In our study 70.17 % patients accept treatment only after counseling and awareness about the chickenpox. Meyers J *et al.*, in 2018 also informed in their study that literate students also unaware about varicella zoster virus due to non availability of sufficient literature<sup>7</sup>. Previously chickenpox was noted as children's disease as only 2 % adults affected by this disease<sup>8</sup>. But further it was observed equally in adults too<sup>9,10</sup>. In our study also 39.47 % (45/114) positive patients were more than 15 years. But some of the studies found children less than 15 years were as most affected<sup>11</sup>. Overall all age groups are equally in risk. The sex wise positivity analysis showed higher in male in our study (50.88 %). There are few researchers who also found higher in male with female ratio<sup>12</sup>. We did not find any mortality of positive cases but some of the researcher reported mortality during their study<sup>13</sup>. Which itself indicates the disease burden. We found the maximum cases in the month of December followed by the month May. Some of the other research also revealed that chickenpox no more a warm month disease<sup>14</sup>. Again, some of the studies conclude tribal populations as high risk group but our study indicated that all communities may suffer by this disease<sup>15</sup>.

## CONCLUSION

Our study indicates that all age groups, sex, communities and any session Assam is in risk for chickenpox. Again due to traditional believes or wrong concept or lack of awareness people never seek medical treatment and advice. To overcome from all issues government must prepare a clear policy for awareness, immunization and treatment. ANMs, MPWs, SWs, ASHAs and other health workers must be in field for routine surveillance to find out the cases. NGOs help also support.

Government may introduce the testing facilities at least at District Hospital levels.

## ACKNOWLEDGEMENTS

The authors are highly acknowledged to Dr. Indrani Gogoi (Community Medicine), Trisha Kataki (District Epidemiologist, IDSP) and Chandana Kalita (Laboratory Technician) for their support in different steps of the study works.

## REFERENCES

1. Jovanovic J, Cvjetkovic D, Pobor M, Brkic S. Primary infection with varicella-zoster virus in risk groups. *Pub Med-NCBI* 1998; 51(3): 151-4.
2. Sharma J, Baruah MK. Incidence of suspected measles and chickenpox cases in Dhemaji district of Assam, India. *Journal of zoological and bioscience research* 2014; 1: 25-27.
3. Quinlivan M, Hawrami K, Barrett-Muir W, Aaby P, Arvin A, Chow WT *et al.* The molecular epidemiology of Varicella-Zoster Virus: Evidence for geographic segregation. *The Journal of infectious diseases* 2002; 186: 888-94.
4. Baghel N, Awasthi S, Kumar SS. Epidemiological study of herpes zoster in a tertiary care hospital. *International Journal of Research in Medical Sciences* 2017; 5: 4550-4553.
5. Vossen MTM, Gent MR, Peters KMC, Dillen P, Dolman KM, Breda AV *et al.* Persistent detection of varicella-zoster virus DNA in a previously healthy child after severe chickenpox. *Journal of clinical Microbiology* 2005; 43: 5614-5621.
6. Chatterjee CK, Kunwar CR, Taneja CG, Mitra LCS, Srinivas BV. An outbreak of Varicella among troops on the move: A

- challenge in field epidemiology. *Journal of Marine Medical Society* 2018; 20: 38-43.
7. Meyers J, Logaraj M, Ramraj B, Narasimhan P, MacIntyre CR. Epidemic varicella zoster virus among university students, India. *Emerging infectious diseases* 2018; 24: 366-369.
8. Sarma HK. Chickenpox in pregnancy- a challenge to the obstetrician. *Journal of obstetrics and gynaecology barpeta* 1: 1-2.
9. Lee BW. Review of varicella zoster seroepidemiology in India and south East Asia. *Tropical medicine and International Health* 1998; 3: 886-890.
10. Sahay RR, Yadav PD, Majumdar T, Patil S, Sarkale P, Shete AM *et al.* Clinico-epidemiological investigation on varicella zoster virus indicates multiple clade circulation in Maharashtra state, India. *Heliyon* 2018; 4: e00757.
11. Singh MP, Chandran C, Sarwa A, Kumar A, Gupta M, Raj A *et al.* Outbreak of chickenpox in a union territory of North India. *Indian Journal of Medical Microbiology* 2015; 33: 524-527.
12. Singh MP, Singh G, Kumar A, Singh A, Ratho RK. Epidemiologic lessons: Chickenpox outbreak investigation in a rural community around Chandigarh, North India. *Indian Journal of Pathology and Microbiology* 2011; 54: 772-774.
13. Singh KP, Jain P, Praksh O, Khan DN, Gupta S, Prakash S *et al.* Outbreaks of measles and chickenpox in eastern Uttar Pradesh, India. *Clinical Epidemiology and Global Health* 2014; 2: 3-8.
14. Kadri SM, Rehman SU, Rehman K, Gergianaki I. Rising trends of chickenpox outbreaks among school children in Kashmir, India- Suggestion for health policy. *EC bacteriology and virology research* 2017; 2: 179-190.
15. Pall S, Kumar D. Outbreak investigation of viral exanthem in Jharkhand, India: an eye opener for surveillance managers and vaccine policy makers. *International Journal of Community Medicine and Public Health* 2018; 5: 4756-4760.

## Cite this article as:

Mridul Malakar *et al.* Chickenpox, Traditional inhibition and treatment neglecting - A Study in Assam, India. *Int. Res. J. Pharm.* 2019; 10(5):112-114 <http://dx.doi.org/10.7897/2230-8407.1005174>

Source of support: Nil, Conflict of interest: None Declared

Disclaimer: IRJP is solely owned by Moksha Publishing House - A non-profit publishing house, dedicated to publish quality research, while every effort has been taken to verify the accuracy of the content published in our Journal. IRJP cannot accept any responsibility or liability for the site content and articles published. The views expressed in articles by our contributing authors are not necessarily those of IRJP editor or editorial board members.