



VARICELLA ZOSTER IN A MILITARY NURSING INSTITUTE

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INTRODUCTION

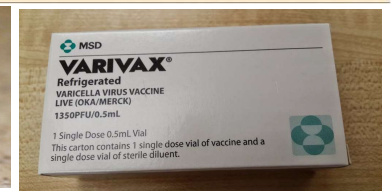
- Varicella zoster (VZ) is a highly contagious systemic disease caused by varicella zoster virus (VZV)
- Humans is the only reservoir.
- Self-limiting exanthematous disease in children followed by lifelong immunity
- VZ causes a severe disease in adolescents, adults, neonates, infants, and critically ill and immunocompromised patients
- Mortality is 1 in 60,000
- Attack rate-65%-87% household settings, 80% in hospital.
- Outbreaks in critical areas of hospitals are difficult to control

RESULTS

- Military nursing students, healthcare staff, patients, and visitors
- VZ outbreaks were established on the criteria of > 5 patients
- incubation period of 10- 21 days after the occurrence of VZ in the patient
- Diagnosis in fresh patients was based on clinical definitions of an illness
- Recovery from VZ infection was considered after an afebrile period of 48 hours and scabbing of VZ rashes
- A total of 114 nursing students were evaluated
- A guided Questionnaire about clinicodemographic, exposure, confinement, and vaccination parameters was used
- Source tracing was attempted.
- Outbreak control measures included isolation and confinement
- All confirmed patients were administered with 800mg acyclovir five times a day along with symptomatic treatment.
- Surveillance was continued through two full incubation periods, 42 days after the disease onset



	Frequency, %	Age	SD	95% CI
Clinicodemographic Characteristics (n = 23)				
Mean age, y	20.5	-	1.12	20.4 - 20.6
Fresh patients	19	82.6	-	67.1 - 98.1
Breakthrough VZ	5	21.7	-	4.8 - 38.5
Lesions < 50 (mild VZ)	15	65.2	-	45.7 - 84.7
Lesions 51 - 250 (moderate VZ)	3	13	-	-
Lesions > 250 (severe VZ)	5	21.7	-	4.8 - 38.5
Average number of lesions	252.57	-	562.37	238.1 - 267
Pruritus	4	17.4	-	1.9 - 32.9
Fever	11	47.8	-	27.4 - 68.2
Weakness	6	26.1	-	8.1 - 44.1
Upper respiratory infection	1	4.3	-	-
Hospitalizations	10	43.5	-	23.2 - 63.8
Confined to hostel	12	52.2	-	31.8 - 72.6
Mean period of hospitalization (d)	8.9	-	3.75	8.12 - 9.68
Post-exposure immunoprophylaxis	1	4.3	-	-
Post-exposure chemoprophylaxis/chemotherapy	14	60.9	-	41 - 80.8
Duration of acyclovir therapy, d	6.1	-	4.39	5.14 - 7
Outbreak Characteristics (n = 23)				
Mean incubation period, d	9.05	-	1.1	8.3 - 9.8
Pooled attack rate (23/59)	39%	-	-	26.5 - 51.4
Mean VZ cases	1.92	-	1.1	1.5 - 2.4



DISCUSSION AND CONCLUSION

- The current outbreak investigated for VZ occurring amongst military nursing students over four years.
- Occurrence of VZ outbreaks in young females in four consecutive years reveals the heterogeneous pattern of childhood exposures and protective titres.
- Close contact through accommodation, academic, and recreational activities facilitated transmission.
- There were 25 susceptible contacts within the cohort of 114 Students
- Outbreaks of VZ are emerging in the middle and low income countries due to inadequate immunization coverage,
- Isolated case-patients of VZ need to be investigated in hospital and institutional settings before the onset of possible outbreak
- Post-exposure VZ vaccination within three days of exposure
- Acyclovir chemoprophylaxis amongst susceptible exposed personnel from seven to ten days after exposure for seven days.
- The global effectiveness for single and double dose VZ vaccines is 81% and 92%, respectively.

REFERENCES

- California Department of Public Health. Varicella Investigation Quick sheet. 2016. Available from: <https://www.cdph.ca.gov/programs/immunize/Documents/CDPHVaricellaQuickSheet.pdf>.
- Jindal AK, Pandya K, Khan ID. Antimicrobial resistance: A public health challenge. Med J Armed Forces India. 2015;71(2):178-81. doi: 10.1016/j.mjafi.2014.04.011. [PubMed: 25859082]. [PubMed Central: PMC4388962].