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Original Research Article

Clinical Pattern and Outcomes of Viral Dermatoses in a Tertiary Care Hospital

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Abstract:

Background: Viral dermatoses are common in dermatology practice and show varied clinical patterns influenced by age, immunity, and comorbidities. Tertiary care centers frequently manage severe and atypical cases, necessitating evaluation of their clinical spectrum and outcomes.

Aim: To analyze the clinical patterns and outcomes of viral dermatoses in a tertiary care setting.

Methodology: A prospective observational study was conducted over 7 months in the Department of Skin and VD, Bhagwan Mahavir institute of Medical Sciences, Pawapuri, Nalanda, Bihar, India.Seventy-eight clinically diagnosed cases of viral dermatoses were enrolled. Detailed history, examination, relevant investigations, and follow-up assessments were performed. Data were analyzed using descriptive statistics and Chi-square test.

Results: Males constituted 60.3% of cases. Herpes zoster was most common (33.3%), followed by warts (28.2%), molluscum contagiosum (17.9%), herpes simplex (15.4%), and chicken pox (5.1%). Herpes zoster predominantly affected 41–50 years, with thoracic dermatome involvement (46.2%) and post-herpetic neuralgia as the most frequent complication (19.2%). Warts were common in 21–30 years, with verruca vulgaris (40.9%) being the predominant type. Most patients had favorable outcomes without major complications.

Conclusion: Viral dermatoses show distinct age and sex predilections in tertiary care, with generally good outcomes. Early diagnosis and appropriate management reduce complications and morbidity.

Keywords: Viral dermatoses, Herpes zoster, Warts, Molluscum contagiosum, Clinical pattern, Tertiary care, Outcomes.

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Introduction

Viral dermatoses comprise major percentage of dermatological diseases encountered in everyday clinical practice and a major health issue in the community since they are contagious, recurrent, and may have complications. These infections are infectious to all age groups and can show different clinical manifestations based on host immunity, environmental and underlying systemic diseases. In tertiary care units where patients tend to present advanced, atypical, or complicated diseases, the clinical spectrum and outcome of viral dermatoses become of particular interest. The overall assessment of their clinical patterns will help in early diagnosis, proper therapeutic intervention, prevention, and minimization of long-term sequelae.

Herpes zoster is one of the most frequently encountered viral dermatoses since it has a characteristic presentation and morbidity. The virus that is known as varicella zoster virus is a neuro-dermotropic virus that causes herpes zoster and spread all over the world. It occurs as an outcome of the reactivation of the virus stored in the sensory ganglion [1] after a clinical or subclinical infection with varicella (chicken pox) in childhood or uterus. The reactivation is commonly linked to the deteriorating cell-mediated immunity, aging, stress, malignancy, or immunosuppressive condition. Herpes zoster clinically occurs with non-healing, unilateral, dermatomal vesicles with pain, burning or paresthesia. In most cases, the disease is self-limiting, but complications may arise like post-herpetic neuralgia, secondary bacterial infection, ophthalmic involvement and disseminated disease particularly in immunocompromised patients. The cases of complicated herpes zoster tend to be more prevalent in the tertiary care centers because of the referrals of complicated or uncharacteristic cases, and it is necessary to investigate their clinical presentation and treatment outcomes in the setting [2].

Another important viral dermatosis with significant psychosocial and population health consequences is genital herpes. It is an infection of either herpes simplex virus type 1 (HSV-1) or herpes simplex virus type 2 (HSV-2) and it is one of the most widespread sexual diseases (STD). It is an infection identified by the repeated painful vesicles and ulcers on the genital and perigenital areas which are usually accompanied by the systemic symptoms in the first episode. Recurrent episodes are less severe and more likely to cause morbidity and transmit disease. Genital herpes epidemiology has changed over the years, and HSV-1 has become a cause of the disease alongside HSV-2. Patients in tertiary care hospitals can have widespread, recurrent, or treatment-resistant lesions, particularly under immunosuppression. The analysis of the clinical trends of genital herpes in these environments is useful in understanding the disease behavior, recurrence rate, risk variables, and treatment results.

Another most common viral dermatosis is cutaneous warts which is due to Human Papilloma Virus (HPV). These harmless spreads of the skin and mucosa are spread by direct or indirect contacts and are determined by the status of host immunity. The clinical morphology of warts is rather diverse, there are common warts (verruca vulgaris), plantar warts, flat warts, filiform warts, and genital warts. Some types of HPV cause genital warts which are signs of a highly contagious sexually transmitted disease. In spite of the fact that a lot of warts are asymptomatic and can go into remission, recurrent, numerous or persistent lesions are prevalent, especially in immunocompromised patients. Genital HPV infection has oncogenic potential depending on the type of the virus in addition to cosmetic concerns. Complex or recalcitrant cases that involve complex or refractory conditions may be treated with complex therapeutic modalities including cryotherapy, electrocautery, laser ablation, or immunotherapy in the tertiary care units. Comparison of the clinical spectrum and response to different treatment modalities in such environment helps in enhancing the management protocols.

Another clinically significant viral dermatosis is called Molluscum contagiosum and is especially common in children and immunocompromised adults. It belongs to the family of pox virus in a particular genus molluscipox [3]. The infection manifests itself in the form of discrete, dome-shaped, umbilicated papules, which are usually found on the face, trunk, and extremities in children and the genital area in adults. Although molluscum contagiosum is usually self-limiting among healthy humans, it can be extensive, chronic or recalcitrant in some circumstances. Refractory and extensive Mollusca on the face is most frequently observed in HIV disease [4] and also in immunosuppression which is caused estrogenically. The lesions can be very many, large, non-classical, and may not respond to the traditional interventions in such patients. The high prevalence of molluscum contagiosum can be used to cutaneous mark the immunodeficiency underlying, and thus the need to consider careful examination in tertiary care environments.

Viral dermatoses have a clinical presentation mainly dependent on several host and environmental factors, such as age, gender, nutritional status, hygiene, socioeconomic factors and immune competence. The presence of immunocompromised conditions like HIV infection, malignancy, organ transplantation, and a long-term corticosteroid or immunosuppressive treatment, cause significant changes in the natural course of these infections [5]. Viral dermatoses in such individuals can have atypical morphology, become more severe, last longer, recur more frequently, and have more complications. So, the tertiary care hospitals, hospitals with a big number of patients having complex comorbidities, are the most suitable centers to investigate the diverse clinical patterns and outcomes of this comorbidity [6].

The outcomes of viral dermatoses can be understood by evaluating clinical resolution, recurrence, complications, response to treatment, as well as the effect on the quality of life. Chronic pain syndromes may be occasioned by conditions like herpes zoster; genital herpes may cause psychological distress and social stigma; HPV-associated genital warts may have sexual health and oncogenic implications, and a persistent molluscum contagiosum may signify underlying system disease. Clinical vigilance is crucial in preventing transmission and reducing morbidity as diagnosis and prompt management can go a long way.

Although viral dermatoses are very common, their clinical manifestation and treatment effects vary among various groups of people and healthcare institutions. The disease patterns may be affected by regional epidemiological factors, the healthcare-seeking behavior, the access to diagnostic facilities and the treatment protocols. The tertiary care centers are especially useful sources of data because they may represent a pool of severe, atypical, or refractory cases. This kind of data may prove useful in determination, assessing treatment effectiveness, and developing evidence-based management approaches.

In this regard, the current study seeks to identify the clinical features and outcome of viral dermatoses in a tertiary care environment. By systematically evaluating cases of herpes zoster, genital herpes, cutaneous warts including genital warts, and molluscum contagiosum, this study seeks to document their demographic distribution, clinical morphology, associated risk factors, complications, and response to treatment. The findings are expected to contribute to a better understanding of disease burden, guide

clinical practice, and enhance patient care in tertiary healthcare institutions.

Methodology

Study Design: This study was conducted as a hospital-based prospective observational study to evaluate the clinical patterns and outcomes of viral dermatoses among patients attending a tertiary care center. The objective was to systematically observe, document, and analyze the clinical presentation, investigative findings, treatment response, and outcomes in patients diagnosed with viral dermatoses.

Study Area: The study was carried out in the Department of Skin and VD at Bhagwan Mahavir Institute of Medical Sciences, Pawapuri, Nalanda, Bihar, India.

Study Duration: The study was conducted over a period of 7 months from February 2025 to August 2025.

Sample Size: A total of 78 patients who were clinically diagnosed with viral dermatoses and met the inclusion criteria were included in the study. The sample size comprised consecutive cases attending the OPD during the study period.

Study Population: The study population included patients of all age groups and both sexes who attended the Dermatology OPD and were clinically diagnosed with viral dermatoses during the study period. Patients were enrolled irrespective of socioeconomic background, duration of illness, or severity of presentation.

Data Collection: Data were collected using a structured proforma. A detailed history was obtained from each patient, including onset, duration, progression of lesions, associated symptoms such as pain, itching or fever, past history of similar complaints, medical history, drug history, and relevant personal history. A thorough general physical and dermatological examination was performed in all cases. Written informed consent was obtained prior to examination and investigations.

All patients underwent baseline investigations including complete hemogram, urine routine and microscopy, renal function tests, liver function tests, chest X-ray, HBsAg, VDRL, and ELISA for HIV antibodies. In selected cases where indicated, additional investigations were performed. Skin biopsy was carried out under local anesthesia using 1% lidocaine, and the tissue sample was obtained with a biopsy punch and sent for histopathological examination. Tzanck smear examination was performed in suspected herpes virus infections to detect ballooned epithelial cells and multinucleated giant cells.

Patients were treated according to standard treatment protocols based on the specific viral dermatosis diagnosed. They were followed up periodically to assess clinical improvement, response to therapy, and any disease- or treatment-related complications.

Inclusion Criteria

- All patients attending the Dermatology OPD during the study period
- Patients of any age and either sex
- Clinically diagnosed cases of viral dermatoses
- Patients willing to provide informed consent

Exclusion Criteria

- Patients unwilling to give consent for clinical examination or investigations
- Patients lost to follow-up before outcome assessment

Procedure: All patients presenting the Dermatology OPD were screened for viral dermatoses. Eligible patients were enrolled after obtaining informed consent. Detailed clinical evaluation and relevant laboratory investigations were performed. Appropriate treatment was initiated according to diagnosis, and patients were followed up to assess outcomes, improvement, and complications. All findings were recorded systematically and compiled for analysis.

Statistical Analysis: The collected data were entered into Microsoft Excel and analyzed using appropriate statistical software. Descriptive statistics such as mean, standard deviation, frequencies, and percentages were used to summarize demographic variables and clinical patterns. Associations between categorical variables were analyzed using the Chi-square test where applicable. A p-value of less than 0.05 was considered statistically significant."

Result

Table 1 illustrates the pattern of viral dermatoses with sex distribution among 78 patients. Herpes zoster was the most common condition, accounting for 26 cases (33.3%), with a male predominance (16 males, 61.5%; 10 females, 38.5%). Warts were the second most frequent, seen in 22 cases (28.2%), again more common in males (63.6%) than females (36.4%). Molluscum contagiosum accounted for 14 cases (17.9%), herpes simplex for 12 cases (15.4%), and chicken pox for 4 cases (5.1%), with chicken pox showing equal gender distribution. Overall, viral dermatoses were more prevalent in males (47 cases, 60.3%) compared to females (31 cases, 39.7%), indicating a male predominance across most conditions.

Table 1: Pattern of Dermatosis with Sex Distribution of Viral Dermatosis (N=78)			
Conditions	**Male**	**Female**	**Total**
Herpes Zoster	16 (61.5%)	10 (38.5%)	26 (33.3%)
Chicken Pox	2 (50%)	2 (50%)	4 (5.1%)
Herpes Simplex	7 (58.3%)	5 (41.7%)	12 (15.4%)
Warts	14 (63.6%)	8 (36.4%)	22 (28.2%)
Molluscum Contagiosum	8 (57.1%)	6 (42.9%)	14 (17.9%)
Total	**47 (60.3%)**	**31 (39.7%)**	**78 (100%)**

Table 2 presents the age distribution of various viral skin infections according to the most commonly affected age group. Herpes zoster was most frequently seen in the 41–50 years age group (8 cases), indicating a predominance in middle-aged adults. Chicken pox was most common among children aged 0–10 years (3 cases). Herpes simplex predominantly affected individuals aged 21–30 years (6 cases), similar to warts, which were also most common in the 21–30 years group (10 cases). Molluscum contagiosum was most frequently observed in adolescents aged 11–20 years (6 cases). Overall, different viral infections showed distinct age predilections, with herpes zoster more common in older adults and other viral conditions more prevalent in children and young adults.

Table 2: Age Distribution	
Condition	**Most Common Age Group (No. of Cases)**
Herpes Zoster	41–50 yrs (8 cases)
Chicken Pox	0–10 yrs (3 cases)
Herpes Simplex	21–30 yrs (6 cases)
Warts	21–30 yrs (10 cases)
Molluscum Contagiosum	11–20 yrs (6 cases)

Table 3 shows the distribution of skin lesions according to sensory dermatome in 26 patients with herpes zoster. Spinal dermatomes were most commonly involved, particularly the thoracic dermatome, affecting 12 patients (46.2%), followed by cervical involvement in 6 patients (23.1%) and lumbar involvement in 5 patients (19.2%). Sacral dermatome involvement was rare, seen in 1 patient (3.8%). Cranial nerve involvement was limited to the trigeminal (ophthalmic) branch in 2 patients (7.7%). No cases of disseminated herpes zoster were observed. Overall, thoracic dermatomal involvement was the most frequent presentation, with males (16 cases) more commonly affected than females (10 cases).

Table 3: Distribution of Skin Lesions with Regard to Sensory Dermatome in Herpes Zoster (N=26)				
Distribution of Skin Lesions	**Male**	**Female**	**Total**	**Percentage (%)**
Spinal Dermatome				
Thoracic	7	5	12	46.20%
Cervical	4	2	6	23.10%
Lumbar	3	2	5	19.20%
Sacral	1	0	1	3.80%
Cranial Nerve				
Trigeminal (Ophthalmic)	1	1	2	7.70%
Disseminated	0	0	0	0%
Total	**16**	**10**	**26**	**100%**

Table 4 presents the complications observed in 26 patients with herpes zoster. Post-herpetic neuralgia was the most common complication, occurring in 5 patients (19.2%). Secondary infection and hypopigmentation were each noted in 2 patients (7.7%), while hyperpigmentation and corneal involvement were reported in 1 patient each (3.8%). The majority of patients, 15 (57.8%), experienced no complications. Overall, although most patients had an uncomplicated course, post-herpetic neuralgia was the leading adverse outcome.

Table 4: Complications in Patients with Herpes Zoster (N=26)	
Complication	**No. of Patients (%)**
Post Herpetic Neuralgia	5 (19.2%)
Secondary Infection	2 (7.7%)
Hypopigmentation	2 (7.7%)
Hyperpigmentation	1 (3.8%)
Corneal Involvement	1 (3.8%)
No Complication	15 (57.8%)

Table 5 shows the distribution of types of warts among 22 patients. Verruca vulgaris was the most common type, observed in 9 cases (40.9%), followed by condyloma acuminata in 5 cases (22.7%). Verruca plana accounted for 4 cases (18.2%), while filiform warts and plantar warts were each seen in 2 cases (9.1%). Overall, verruca vulgaris was the predominant wart type, comprising nearly two-fifths of all cases.

Table 5: Types of Warts (N=22)	
Type of Wart	**No. of Cases (%)**
Verruca Vulgaris	9 (40.9%)
Verruca Plana	4 (18.2%)
Filiform Warts	2 (9.1%)
Plantar Warts	2 (9.1%)
Condyloma Accuminata	5 (22.7%)
Total	**22 (100%)**

Discussion

In the current research, which has been carried out at a tertiary care unit, there were 78 cases of viral dermatoses with a male preponderance (60.3) over females (39.7). This is not the first time this was observed in herpes zoster and warts where males were more affected. As an example, as Latheef and Pavithran (2011) found, in herpes zoster, the male proportion was higher, and the ratio was similar to ours [5], a population-based study in Korea showed an almost equal gender distribution, which is contrary to our data (Kim et al., 2014) [6]. The situation based on male dominance in our series could be based on the behavior of seeking health or exposure patterns of the adult male population."

The most frequent viral dermatosis in our research was herpes zoster which was present in 33.3% of cases. The percentage, though smaller than those reported in larger hospital-based series like the 235 cases reported by Pavithran (1986) [1], the proportion of herpes zoster as a percentage of viral dermatoses in tertiary settings are similar. The highest incidence in our study was found in the 41-50 age range, which also is in agreement with the current knowledge regarding the fact that the incidence rises with increasing age as a result of a decline in the cell-mediated immunity (Hope-Simpson, 1965) [7]. Nevertheless, Latheef and Pavithran (2011) [5] noted an increased rate among those under 40 years of age, which suggest that there is regional and demographic diversity. Our patients had thoracic dermatomes most (46.2%), cervical and lumbar dermatomes in turn. This distribution is very similar to the classical dermatomal distribution reported by Burgoon et al. (1957) [8] and Hope-Simpson (1965) [7] who also reported thoracic involvement to be the most typical manifestation.

The rate of complications in our herpes zoster cohort was also rather low with 57.8% of the patients having no complications. The incidence of post-herpetic neuralgia (PHN) was 19.2% which is higher than 9.7% reported by Burgoon et al. (1957) [8] and 10.24% by Abdul Latheef and Pavithran (2011) [5] but lower than 30% reported as per some hospital-based studies. The fact that PHN has been observed in almost a quarter of our patients underscores the clinical relevance of the condition especially in the middle aged and aged. Bader (2013) [11] noted that early antiviral treatment as well as vaccination are major preventive measures against PHN, and this could be the reason why there are diverse rates that have been reported in various studies and settings.

The second viral dermatosis that was found in our series (28.2%), was the warts, which is similar to the 28.6 percent reported in previous institutional data. Hallier (1951) [10] indicated that warts contribute 1025% of the new dermatology clinic patients in Britain and our results are in the upper end of the scale of global observations. Our study gave the largest frequency in the 21-30 age group, and Ronchese (1966) [11] indicated that the highest age was in adolescence (12-16 years), and then the frequency decreased in adulthood. This mismatch could be attributed to variations in healthcare use, cosmetic issues and patterns of sexual behavior, especially with genital warts. The most prevalent one in our study was verruca vulgaris (40.9) just like most clinical series, and condyloma acuminata

involved 22.7% of wart cases. Our finding that genital warts were mainly common in the sexually active population of 21-30-year-old population is supported by the estimation of the prevalence of genital HPV infection in the clinic as around 1% (Scheinfeld and Lehman, 2006) [12]. Our condyloma cases had a lower male: female ratio (3:1) than that of 7:1 reported by Reddy et al. (1977) [13] which could be a source of altering sexual health awareness and use of healthcare.

In our study, Molluscum contagiosum constituted 17.9% of viral dermatoses, which is a little bit higher than former hospital-based statistics of 14.3%. Our highest incidence in the series was in the age group 11-20 years of age, and this is also in line with the epidemiological trend of Dohil et al. (2006) [14] who reported more transmission by close contact among children and sexual contact among young adults. Nguyen et al. (2014) [4] emphasized the fact that immunocompromised persons are more likely to have more extensive and recalcitrant lesions; nevertheless, we did not face severe or disseminated cases in the course of our research, which might be explained by the low number of immunosuppressed patients in our cohort.

In our study, herpes simplex followed (15.4) with a high prevalence among the 21-30 years of age. There have been recurrences and complications (erythema multiforme) observed with herpes simplex. The etiological role of HSV infection was described by Cretu et al. (2015) [15] who indicated rates of 17.5% of erythema multiforme. A higher rate of recurrence was found in genital herpes and particularly the HSV-2 infection was more common and Corey and Handsfield (2000) [17] highlighted that a significant proportion of the genital herpes disease goes undiagnosed. In our study, the recurrence rates were not studied systematically, however, the prevalence in young adults is related to the global epidemiological trends.

The least frequent viral dermatosis was chickenpox, which was reported in 5.1% of our series, mostly in the 0-10-year age group, which is in line with its known epidemiology as childhood exanthem. This may be due to the low number of cases as a result of the growing vaccination coverage and better population health practices over the past years.

In general, we have shown that herpes zoster is the most popular viral dermatosis in tertiary care facilities, and thoracic dermatomes and PHN are the most striking outcomes. Adolescents and young adults are most susceptible to warts and molluscum contagiosum, which is also a result of behavioral and immunological aspects. Aging differences and complication differences and gender differences in relation to previous Indian and international literature as well points to how demographic changes, immunization and early treatment therapy of viral dermatoses impact the clinical pattern and outcome of viral dermatoses in tertiary care centers.

Conclusion

The current study shows that viral dermatoses commonly occur in a tertiary care environment, has a preponderance of males, and displays different age-specific patterns in multiple diseases. The herpes zoster became the most common viral dermatosis, mostly occurring in middle aged individuals, with the most commonly affected areas being thoracic dermatomes and post-herpetic neuralgia being the most critical complication, yet majority of the patients did not develop any complication. The second significant category was the warts, which mostly affected young adults, of which verruca vulgaris was the most common form of warts. Herpes simplex was also common among the young adults and molluscum contagiosum and chicken pox were common among children and adolescents.

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