CLINICO-EPIDEMIOLOGICAL STUDY OF WARTS IN A TERTIARY CARE HOSPITAL

Rompicheria Bhanu Prakash¹, Jonnalagadda Balachandrudu², P. Penchala Reddy³

¹Senior Resident, Department of Dermato-Venereology, Sri Venkateswara Medical College/SVRRGG Hospital, Tirupati, Andhra Pradesh, India.

²Assistant Professor, Department of Dermato-Venereology & Leprology, Sri Venkateswara Medical College/SVRRGG Hospital, Tirupati, Andhra Pradesh, India.

³Professor and HOD, Department of Dermato-Venereology & Leprology, Narayana Medical College and Hospital, Nellore, Andhra Pradesh, India.

ABSTRACT

BACKGROUND

Warts, which are also called as Verrucae are the commonest viral infections encountered in the dermatology practice. Warts are caused by Human Papilloma Virus (HPV). We wanted to study the clinical and epidemiological aspects of warts and determine the distribution of warts in relation to age, sex, occupation and socioeconomic status.

METHODS

The present study was conducted in a sample of 200 clinically diagnosed cases of Warts attending the outpatient Department of DVL. A clinico-epidemiological study was undertaken in a sample of 200 clinically diagnosed cases of Warts selected randomly from patients attending the outpatient Department of DVL.

RESULTS

The maximum distribution was noted in the age group of 11-20 years of life (34%). In the present study, males were found to be predominantly affected with a male to female ratio of 2.03:1. In the present study, common warts were the most common type with 106 cases (53%) followed by plantar warts 23 (11.5%), flat warts 22 (11%), genital warts 20 (10%), periungual warts 11 (5.5%), palmar warts 9 (4.5%), filiform warts 5 (2.5%) and digitate warts 4 (2%). In the present study, most common sites involved were extremities which is observed in 128 cases (64%) followed by face in 32 cases (16%), anogenital area in 20 cases (10%), neck in 11 cases (5.5%). Least common site involved was scalp 2 cases (1%) followed by trunk in 6 cases (3%). Diffuse involvement of warts is seen in one patient. In the current study, 7 patients (3.5%) were found to be seropositive for HIV.

CONCLUSIONS

Warts are the commonest viral infections which are encountered in the Dermatology speciality. Warts were more common among children than adults. Mean age of presentation was 24.98 years. The Age group most commonly affected was 11-20 years with 68 cases (34%) followed by 21-30 years with 56 cases (28%). Males were (67%) more commonly affected than females (33%). Male to female ratio was 2.03:1. Extremities were the most common sites involved (64%) followed by face (16%), anogenital area (10%) and neck (5.5%). Scalp was the least common site involved (1%) followed by trunk (3%). Common warts were the commonest type with 106 cases (53%) followed by plantar warts 23 (11.5%), flat warts 22 (11%), genital warts 20 (10%), periungual warts 11 (5.5%), palmar warts 9 (4.5%), filiform warts 5 (2.5%), digitate warts (2%). Multiple site involvement was common among children.

HOW TO CITE THIS ARTICLE: Prakash RB, Balachandrudu J, Reddy PP. Clinico-epidemiological study of warts in a tertiary care hospital. J. Evolution Med. Dent. Sci. 2019;8(16):1258-1261, DOI: 10.14260/jemds/2019/280

BACKGROUND

Warts, which are also called as Verrucae are the commonest viral infections encountered in the dermatology practice. Warts are caused by Human Papilloma Virus (HPV).

Human Papilloma Virus

Papillomaviruses are a large group of DNA viruses that are widely distributed in animals and humans, most commonly inducing benign papillomas or warts.

Classification of Warts

1. Cutaneous Warts

- Verruca vulgaris/Common warts. [Photo-1]
- Plane warts/ Verruca plana/Flat warts. [Photos-2]
- Filiform warts.

2. Genital Warts (Anogenital Warts)^[1] Condyloma Acuminata [Photo-3]

- Papular warts.
- Keratotic warts or Verruca vulgaris type.
- Flat – topped warts.
- Giant condyloma (Buschke-Lowenstein tumour).

'Financial or Other Competing Interest': None.

Submission 18-01-2019, Peer Review 09-04-2019,

Acceptance 16-04-2019, Published 22-04-2019.

Corresponding Author:

Jonnalagadda Balachandrudu,

Assistant Professor,

Department of Dermato-Venereology & Leprology,

Sri Venkateswara Medical College/

SVRRGG Hospital, Tirupati,

Andhra Pradesh,

India.

E-mail: jonnalagaddabalu@gmail.com

DOI: 10.14260/jemds/2019/280

Anogenital Warts^[1]**A. Condylomata Acuminata: [Photo-3]**

The term "Condyloma Acuminatum" was originally used to emphasize the difference between anogenital warts, which are usually protuberant, and the flatter syphilitic lesions called Condylomata Lata.

Men: frenulum, corona and glans, penile shaft.

Female: Posterior fourchette, perianal skin, groin, pubic skin, labia minora,

Respiratory (Laryngeal) Papillomatosis:^[2]

These are mainly due to HPV-11, HPV-6, Respiratory (laryngeal) papillomatosis is characterized by the presence of multiple benign, noninvasive warts that usually involve the larynx include hoarseness of voice and stridor.

Photograph 1. Verruca Vulgaris (Common Wart)

Photograph 2. Verruca Plana (Flat Wart)

Photograph 3. Condyloma Acuminata

Aims & Objectives

1. To study the clinical and epidemiological aspects of warts.
2. To determine the distribution of warts in relation to age, sex, etc.

METHODS**Study Design**

Cross sectional analytical study.

Study Setting

Tertiary care hospital in Nellore.

Study Period

Sept. 2015 to Sept. 2018

Study Population

200 clinically, & morphologically diagnosed cases of warts attending the outpatient department of DVL (irrespective of age and sex).

Sample Size

The researcher has used random sampling and to select the sample, the formula of taro Yamane (1967) has been used with the following formula.

$$\text{Formula } n = \frac{N}{1 + Ne^2}$$

When n = size of sample group

N = size of all population

e = the miss adjusting rate in random sampling at level 0.05

Previously warts patients in our institute in last year of period. As population of the study (N=400).

$$n = \frac{400}{1 + (400)(0.05)^2}$$

$$= \frac{400}{2000}$$

$$= 200.00$$

Therefore, the sample size as per the formula will be 200 cases will be studied.

Sampling methods: Convenience sampling methods

Inclusion Criteria

All, Patients who presented with clinically and morphologically diagnosed cases of warts irrespective of age, sex, and attending to outpatient Department of DVL.

Exclusion Criteria

Patients who are suffering with psychiatric illness were excluded from the study.

Study Procedure

A detailed history was taken regarding the age, sex, site, type, duration, sexual exposure, marital status, personal hygiene.

Clinical Examinations

Complete physical examination was carried out in all the cases along with local examination of the lesions with particular attention to the distribution, the type, distribution of lesions and secondary changes. Digital images (photographs), of the patients who consented, were taken.

A dermatological examination was done, taking care to note the morphology and distribution of the warts. The following routine laboratory investigations were done-

1. Complete blood picture.
2. Complete urine examination.
3. Random blood sugar.
4. Blood- V. D. R. L test.
5. ELISA test for HIV.
6. Biopsies sent to pathology Department for histopathological study.

Statistical Methods

Descriptive and inferential statistical analysis has been carried out in the present study. Results on continuous measurements are presented and results on categorical measurements are presented in number (%). Significance is assessed at 5 % level of significance. The following assumptions on data was made.

Chi-square test has been used to find the significance of study parameters on categorical scale between two or more groups. The confidence interval is calculated according to the recommended method given by Altman et al. (2000).

Statistical Software

The Statistical software namely SPSS 21.0, were used for the analysis of the data and Microsoft word and Excel have been used to generate graphs, tables etc.

RESULTS

A total of 200 clinically & morphologically diagnosed cases of warts were included in the current study who attended to outpatient Department of DVL.

Age Distribution

Age Group (Yrs.)	No. of Males	No. of Females	Total	Percentage
1 to 10	13	3	16	8
11 to 20	41	27	68	34
21 to 30	35	21	56	28
31 to 40	33	10	43	21.50
41 to 50	10	1	11	5.50
51 to 60	0	4	4	2
More than 60	2	0	2	1
Total	134	66	200	100
Chi-square	$\chi^2 = 17.162$ p=0.008; df = 6 (p<0.01)			

Table 5.1. Age Distribution in The Study Group

Among the 200 cases included in the study, patients belonging to all the age groups were included, the youngest being 7 years old and the eldest 68 years old. The mean age was 25 years with a median of 20 years. Distribution of most common age group affected was 11-20 years with 68 cases (34%) followed by 21-30 years with 56 cases (28%), 31-40 years with 43 cases (21.5%), 1-10 years with 16 cases (8%). Least common age groups affected was more than 60 years with 2 cases (1%) followed by 51-60 years with 4 cases (2%). From the chi-square value we see that significance level of 99 % has been achieved. This means that chi-square value is showing systematic association between the above two variables. Statistical analysis showed these findings were highly significant. (p<0.01).

Sex Wise Distribution

Graph 5.2. Sex Wise Distribution in The Study Group

Sex	No. of Patients	Percentage
Males	134	67
Females	66	33
Total	200	100

Table 5.2. Sex Wise Distribution in The Study Group

Out of 200 patients, the distribution in males were more commonly affected with 134 cases (67%) than females, who were 66 cases (33%). Male to Female ratio was 2.03:1 in the current study.

Clinical Type	No. of Males	No. of Females	Total	Percentage
Common Warts	78	28	106	53
Genital Warts	10	10	20	10
Flat(Plane) Warts	15	7	22	11
Periungual Warts	10	1	11	5.50
Plantar Warts	12	11	23	11.50
Filiform Warts	5	0	5	2.50
Palmar Warts	1	8	9	4.50
Digitate Warts	3	1	4	2
Total	134	66	200	100
Chi-square	$\chi^2 = 25.131$ p=0.000; df = 7 (p<0.01)			

Table. Distribution of Clinical Types of Warts

Out of 200 cases, distribution of common warts were the common type with 106 cases (53%) followed by plantar warts 23 (11.5%), flat warts 22 (11%), genital warts 20 (10%), periungual warts 11 (5.5%), palmar warts 9 (4.5%), filiform warts 5 (2.5%), digitate warts (2%). Overall male to female ratio of our study patients was 2: 1. All cases of warts except those of the mosaic and all four of those of filiform warts were males. Two thirds. (3/5) of the cases of mosaic warts were females. There is significant relationship between gender and clinical type towards common warts were common. Statistical analysis showed these findings were highly significant (p<0.01)

Site

Site Involved	No. of Males	No. of Females	Total	%
Extremities	92	36	128	64
Face	19	13	32	16
Neck	7	4	11	5.50
Anogenital	10	10	20	10
Trunk	4	2	6	3
Scalp	2	0	2	1
Diffuse	0	1	1	0.50
Total	134	66	200	100
Chi-square	$\chi^2 = 13.404$ p=0.037; df = 6 (p<0.05)			

Table 5.9. Site Wise Distribution of Warts

Out of 200 patients, distribution of most common site involved is extremities which is observed in 128 cases (64%) followed by face 32 cases (16%), anogenital area 20 cases (10%), neck 11 cases (5.5%). Least common site involved is scalp 2 cases (1%) followed by trunk 6 cases (3%). Diffuse involvement of warts is seen in one patient. These findings were found to be statistically significant using chi-square test p=0.037.

DISCUSSION

Age Distribution

Warts can occur at any age but uncommon in infancy and more common among teenagers and adults. The distribution was 2%-20% in school children and about 10% in young adults, and decreases with age.

Of the 200 cases included in the study, patients belonging to all the age groups were included, the youngest being 7 years old and the eldest 68 years old. The mean age of presentation was 24.98 years. Most common age group affected was 11-20 years with 68 cases (34%) followed by 21-30 years with 56 cases (28%), which is closely similar to other studies done by Shruti S. Ghadgepatil et al., Pragya Kushwaha et al., and Sudhakar Rao et al. But the findings in the present study do not correlate with those of Chandrasekhar Laxmisha et al., and Sumit Sen et al.

A study done by Shruti S. Ghadgepatil et al.,^[3] in the year 2016 which includes 100 patients shows maximum (32%) patients belonged to the second decade of life followed closely (30%) by those in the third decade.

A study done by Sudhakar Rao et al.,^[4] in the year 2011, which includes 90 patients shows maximum (33.3%) patients belonged to second decade.

A study done by Pragya Kushwaha et al.,^[5] in the year 2014 which includes 384 cases shows majority (25%) of patients belonged to age group between 11-20 years.

Sex Distribution

In the present study, the distribution in males (67%) were more commonly affected than females (33%). Male to female ratio was 2.03:1, which is closely similar to other studies done by Chandrasekhar Laxmisha et al and Shruti S. Ghadgepatil et al.

Pragya Kushwaha et al. I were reported that females were commonly affected than males, with male to female ratio being 1:1.3

Male predominance could be due to increased outdoor physical activities and increased opportunity for exposure to infection than females.

Clinical Types of Warts

In the present study, the distribution of Common warts were the most common type (53%) followed by Plantar warts (11.5%) and Flat warts (11%) which is closely similar to other studies done by Barr A et. al, Chandrasekhar Laxmisha et. al, Sudhakar Rao et. al, and Shruti S. Ghadgepatil et al. But the findings in the present study do not correlate with those of Kanwar et al.^[6]

A study done by Kanwar et al., in the year 1990 shows Plantar warts were the most common type (59.38%) followed by common warts (32.5%).

A study done by Chandrasekhar Laxmisha et al., in the year 2003 shows common warts were the common type (74%) followed by plantar warts (23.4%) and flat warts (23.4%).

A study done by Sudhakar Rao et al., in the year 2011 shows common warts were the most common type (66.6%) followed by plantar warts (20%).

A study done by Shruti S. Ghadgepatil et al., in the year 2016 shows common warts were the most common type (42%) followed by palmoplantar warts (20%) and flat warts (18%).

Site

Extremities were the most common site affected according to Shruti S. Ghadgepatil et. al, Sudhakar Rao et. al Chandrasekhar Laxmisha et. al., and Pragya Kushwaha et. al., which is similar to our study.

In the present study, the distribution of Extremities were the most common site involved (64%) followed by Face (16%), Anogenital area (10%) and Neck (5.5%). Scalp was the least common site involved (1%) followed by trunk (3%). Diffuse involvement was observed in one adult seropositive female patient. Inoculation of different virus strains could have been due to contact with multiple individuals and facilitated by repeated trauma in form of minor cuts, abrasions and microinjuries which often occur in extremities and face.^[8] Frequent involvement of the face is probably attributable to the increased cosmetic procedures like waxing, threading, facials, shaving, and so forth, in the salons. Multiple site involvement in warts is more common among children. 5 and 27% in HIV infected individuals.^[7,8]

CONCLUSIONS

Warts are the commonest viral infections encountered in the Dermatology speciality. Warts are most commonly seen among children. The most common age group affected was 11-20 years, followed by 21-30 years. Males were found to be more commonly affected than females. Extremities were the most common sites involved, followed by face, anogenital area and neck (5.5%). Scalp was the least common site involved (1%) followed by trunk (3%). Common warts were the most common type followed by plantar warts, flat warts, genital warts, periungual warts, palmar warts, filiform warts, digitate warts. Multiple site involvement is more common among children.

REFERENCES

- [1] Kumar B, Gupta S. Textbook of sexually transmitted infections. 2nd edn. Elsevier India 2014: p. 216.
- [2] Androphy EJ, Kirnbauer R. Human papilloma virus infections. In: Goldsmith LA, Katz SI, Gilchrist BA, et al. eds. Fitzpatrick's textbook of dermatology in general medicine. Vol. 2. 8th edn. New York, NY: McGraw-Hill Publication 2012: p. 2426.
- [3] Ghadgepatil SS, Gupta S, Sharma YK. Clinicoepidemiological study of different types of Warts. Dermatol Res Practice 2016;2016:7989817.
- [4] Rao SKM, Ankad B, Naidu V, et al. A clinical study on warts. J Clin Diagnos Res 2011;5(8):1582-4.
- [5] Kushwaha P, Sigh S, Kumar H, et al. Warts - Spectra of different clinical presentations. IOSR J Dental Med Sci 2014;8:62-4.
- [6] Kanwar AJ, Bharija SC, Singh G. Clinico-epidemiological study of warts. Indian Journal Dermatol 1990;35(4):111-4.
- [7] Sterling JC. Viral Infections. In: Burns T, Brethnach S, Cox N, et al. eds. Rooks Textbook of Dermatology. 8th edn. West Sussex: Willey Blackwell 2010: p. 33-59.
- [8] Sterling JC, Kurtz JB. Viral infections. In: Champion RH, Burton JL, Burns DA, et al. eds. Rook/Wilkinson/Ebling Textbook of Dermatology. 6th edn. Oxford: Blackwell Science Ltd., 1998: p. 995-1095.