

Prevalence of Viral Skin Infections among Patients in Diyala Province - Iraq

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Abstract

Back ground: Viral skin infections are a common skin problem all over the world especially in childhood and some of which are sexually transmitted with different prevalence rate in relation to age, sex, occupation and social group .

Objective: To determine the prevalence of viral skin infections among Iraqi patients, attending Baquba Teaching Hospital.

Patients and methods: A cross-sectional study was conducted in a consultant clinic of Baquba Teaching Hospital, in Diyala Province during the period of 1st October 2008 to 31 March 2012. In which (802) patients with different viral skin diseases were collected and diagnosed clinically by consultant dermatologists, they were (469) males and (333) females, with a mean age of 27.7 ± 8 years.

Results: The viral skin wart, was the most prevalent (39.1%) and affecting the young adult males predominantly (mean age 23.54 ± 12.5 years). The plane wart affect predominantly teen age group (mean age 14 ± 11 years), pityriasis rosea and Gianotti Crosti syndrome which were regarded as a viral infections or reactive state to a viral infections, shows a relatively high prevalence rate (9.9% and 9.4% respectively). Molluscum contagiosum was also a common disease (9%) and more prevalent in young adult (mean age 21 ± 14.5 years). Although herpes simplex viral skin infection were relatively a common disease in this study (8.4%), but the genital form was less commonly seen in Iraq (0.5%).

Conclusion: This study concluded that viral skin infections were a common problem in Iraq, predominantly in young adult males, with high prevalence of viral wart and low prevalence of xanthematous viral infections.

Key Words: Viral infections, Sexually transmitted disease.

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Introduction

Viruses form a diverse group of infections, a cellular organisms that share a distinctive composition and a unique mode of replication [1].The virus is consisted of virion or (viral particle), which is consisted of a length of nucleic acid, either RNA or DNA, with in a protein shell (capsid) [2] .

Viral replication and production of the protective coat requires host cell ribosome's for translation, i.e. the virus lives as parasite. The viruses are classified according to the type of nucleic acid, either as DNA or RNA group and each class consisted of many families, which include many viruses and the viral skin disease are classified according to the type of the virus [3].

The prevalence of viral skin diseases is variable according to the country, race, age, gender and occupation of the patients [1,2] .

In Iraq the prevalence of viral infections is (7.53%) of all skin disease [4]. Herpes simplex virus (HSV) is a DNA virus, of two types (HSV-1 and HSV-2), both types caused primary and recurrent infections. HSV-1 caused labial infections, clinically presented as itching, tingling or burning sensation with development of red patch, studded by uniform vesicles, which heals spontaneously within 10-14 days in primary and in 7-10 days in recurrent infections, between (30-95)% of adults are seropositive for herpes simplex virus type one (HSV-1). HSV-2 caused genital infections, clinically presented as burning sensation with constitutional symptoms and development of erythematous patch, covered by uniform vesicles on genitalia of both sexes with painful inguinal lymphadenopathy, the lesions heal spontaneously within 2-3 weeks in primary and in 1-2 weeks in recurrent infections, about 30% of young adults are seropositive for HSV-2 and this rises to about 50% by later life [3].

Herpes varicella virus is a DNA virus which caused chicken pox (primary) and herpes zoster (recurrent) infections. The incidence of varicella (chicken pox) in USA in 2002 is 0.92 – 2.63 /1000 person/year, and up to 90% of cases occurs in children younger than 10 years, which is characterized clinically by polymorphic skin rash with mild constitutional symptoms, resolves spontaneously within 7 days. Herpes zoster (shingles) affect approximately (10-20)% of adults, while the incidence is about 1% over the age of 60 years in European and USA studies, clinically presented with band like vesicular eruption of variable size on an erythematous base, also resolves spontaneously within 2-3 weeks and may be

complicated by post-herpetic neuralgia [1,2,3] .

Molluscum contagiosum is caused by pox virus called Molluscum Contagiosum virus, a DNA virus, of 4 types MCV-1,2,3,4, after an incubation period of 14 days to 6 months, a single or multiple shiny, pearly, white, hemispherical umbilicated papule with a central pore, of 1-10mm diameter, spontaneous resolution is possible, prevalence is less than 5% in USA, most commonly seen in children and HIV infected and sexually active adults. Orf is caused by Parapox virus which is a DNA virus, more commonly seen in farmers and shepherds, clinically after an incubation period of 5-6 days, a small, firm, red or reddish-blue papule developed, which enlarges to form a flat-topped haemorrhagic pustule or bullae with crusted umbilicated center, heal spontaneously within 3-4 weeks, it is an uncommon disease [2,5].

Viral wart is caused by Human Papilloma Viruses, which is a DNA virus, infect stratified squamous epithelium of skin and mucosa, more than 120 types, the peak incidence is in adolescence and early adulthood, more common in females, with an incubation period of weeks to years, clinically there are five types of wart, common, planter, plane, filiform and condylomata acuminata. Non-genital wart occurs most frequently in children and young adults, which affect approximately 10% of population, while anogenital warts behave as a sexually transmitted disease, so it is less prevalent and commonly seen in sexually active adults, although warts may be healed spontaneously, but different medical and surgical methods are used in the treatment e.g. topical salicylic acid, trichloroacetic acid, electrocautery, cryosurgery and laser therapy [6].

Gianotti - Crosti syndrome is a common disease of infants and childhood between the

age of 6 months and 12 years (peak age 1-6 years) and only scattered cases reported in adults, which represent a reactive state to a different types of viruses e.g. Hepatitis -B,A , Coxsaki-A,B, Echovirus, self limiting disease [7]. Roseola infantum (sixth disease or exanthema subitum) is usually seen in children between 6 months to 4 years , which is caused by Human Herpes virus type-6 (HHV-6) and the seroprevalence of human herpes virus type six (HHV-6) in the adult population is greater than 95%, self limiting disease [8]. Hand – Foot – Mouth disease is seen in children less than 10 years of age with slight male predominance , caused by Coxsaki-A virus [1] .Viral exanthema may be caused by different viruses for e.g. Rotaviruses,Enteroviruses, Coxsackieviruses, Echoviruses and others, usually seen in children under 2 years of age with male predominance [9,10] .

Pityriasis rosea is suspected to be caused by human herpes virus type seven (HHV-7) both sexes are equally affected, between (10-35years age), clinically , there are primary (herald patch) and secondary rash, self-limiting with in 6-8weeks [1,2]. Erythema infectiosum (fifth disease) is caused by parvovirus B19, its seroprevalence is 15-60% in children (5-19years) of age and 30-60% of adults (1). Measles and rubella are seen in children between age (5-12years) [11, 12].

Patients and Methods

This cross-sectional study was conducted in Baquba Teaching Hospital in a consultant clinic for dermatology, Diyala Province, Iraq, from the 1st October 2008 to 31 March 2012. The patients with viral skin diseases were diagnosed by dermatologists through clinical examination and certain laboratory tests on need (e.g. histopathological test). They were (802) patients, (469) males and (333) females, enrolled in this study. Especial questioners was used including: age, gender and the type of viral skin disease. All data

were analyzed by using computer, using Chi square and the results were considered significant if the P-value was <0.05.

Results

The study shows that the prevalence of different viral skin diseases was slightly more common in males (58.47%) than females (41.52%) with mean age of 27.7 ± 8 years, which was statistically significant (P-value <0.05) (Table-1).

The present work revealed that the viral wart was the most common viral skin infection, which represent 39.1% of viral skin infections, it affect the young adults (mean age 23.54 ± 12.5 years), slightly more prevalent in males (22%) than females (17.1%), also statistically significant (P-value <0.05). The plane wart was the most prevalent type (19.1%), than the common wart (16.6%), planter warts (2%), the condilomata acuminate wart (0.9%) and filiform wart was the less prevalent (0.5%). Plane and filiform wart effect teen ager group while the other forms effect the adults age group .The common , filiform and the condilomata acuminata were more prevalent in males than females (statistically significant P-value <0.05), while plane and plantar wart affect both sexes equally (Table-2) .

Varicella –Zoster infections were the second most common viral skin infection which represent 16.6% of viral skin infections, also it effect the young adults (mean age 25.77 ± 12.5 years) and more common in males (10.09%) than females (6.51%) (statistically significant P-value <0.05), both chicken pox (varicella) and herpes–zoster were equally prevalent, chicken pox effect childhood and herpes zoster effect old age (Table-4) .

Pityriasis rosea, Gianotti – Crosti syndrome and Molluscum Contagiosum were regarded as third, fourth and fifth disease in prevalence (9.9%, 9.4% and 9% respectively)



of the viral skin disease. Pityriasis rosea and Molluscum Contagiosum affect the young adults (20 ± 11.5 and 21 ± 14.5 years ages), while Gianotti Crosti Syndrome affects the infancy and early childhood age group and Molluscum Contagiosum and Gianotti Crosti were more prevalent in males (statistically significant P -value < 0.05), Pityriasis rosea was slightly more common in male than female (Table-1).

Herpes simplex viral skin infection was the sixth disease in the prevalence in this study (8.4%) of viral skin infections with a mean age of 28.4 years and both sexes affected

equally, the labial type (HHV-1) was the most common type (7.9%) of viral skin infections and predominantly seen in the teen age group and both sexes affected equally, while genital infections (HHV-2) was a rare disease and commonly seen in old age males (statistically significant P -value < 0.05) (mean age 44 ± 9.5 years) (Table-3).

The other viral skin infections represented a low prevalence rate, and all of them affect childhood, except the Orf which was predominantly seen in adults age group (mean age 35.7 ± 15.5 years) and with different sex prevalence (Table-1).



Table (1): Distribution of viral skin diseases according to the age and gender.

Type of disease	Males(%)	Females(%)	Total(%)	Mean age years ± S.D.
Viral wart	176(22%)	137(17.1%)	313(39.1%)	23.54 ± 12.5
Herpes simplex viral infection	35(4.3%)	32(4.1%)	67(8.4%)	28.4 ±9.5
Varicella zoster Infection	81(10.09)	52(6.51%)	133(16.6%)	25.77 ±12.5
Molluscum contagiosum	48(5.98%)	24(3.02%)	72(9%)	21 ±14.5
Orf	3(0.42%)	8(0.98%)	11(1.4%)	35.7 ±15.5
Erythema Infectiosum	10(1.24%)	6(0.76%)	16(2%)	11.1 ±8
Exanthema subitum (Roseola infantum sixth disease)	2(0.25%)	2(0.25%)	4(0.5%)	1
Gianotti Crosti syndrome	49(6.1%)	26(3.5%)	75(9.4%)	3.5 ±6
Pityriasis Rosea	42(5.2%)	37(4.7%)	79(9.9%)	20 ±11.5
Hand-foot-mouth disease	7(0.8%)	2(0.3%)	9(1.1%)	4.5 ±4
Viral exanthema	12(1.4%)	6(0.8%)	18(2.2%)	7.7 ±8.5
Measles	3(0.4%)	0(zero)	3(0.4%)	3.7
Rubella	0(zero)	1(0.1%)	1(0.1%)	1
Infectious mononucleosis	1(0.1%)	0(zero)	1(0.1%)	6
Total	469(58.47%)	333(41.52%)	802(100%)	27.7

Table (2): Distribution of different types of viral wart according to the age and gender.

Type of wart	Males (%)	Females (%)	Total (%)	Mean age years ±S.D.
Common wart	83(10.3%)	50(6.3%)	133(16.6%)	27 ±11.5
Plane wart	74(9.5%)	79(9.6%)	153(19.1%)	14 ±11
Planter wart	9(1.1%)	7(0.9%)	16(2%)	23.4 ±13.5
Condilomata accuminata	6(0.7%)	1(0.2%)	7(0.9%)	39.3 ±8
Filiform want	4(0.5%)	0(zero)	4(0.5%)	14 ±9.5
Total	176(22%)	137(17.1%)	313(39.1%)	23.54

Table (3): Distribution of patients with herpes simplex infection according the age and gender.

Type of herpes simplex infection	Males (%)	Females (%)	Total (%) no.	Mean age Years ±S.D.
Herpes simplex Libail infection	31(3.92%)	32(3.93%)	63(7.9%)	12.8 ±9
Herpes.semplex. genital infection	4(0.5%)	0(zero)	4(0.5%)	44 ±10.5
Total	35(4.3%)	32(4.1%)	67(8.4%)	28.4

Table (4): Distribution of patients with Varicella – Zoster infections according to the age and gender.

Disease	Males (%)	Females (%)	Total (%)	Mean age (years) and ±S.D.
Chicken pox	41(5.01%)	28(3.59%)	69(8.6%)	9.8 ±11
Herpes-Zoster	40(4.9%)	24(3.1%)	64(8%)	41.7 ±18.5
Total	81(10.09%)	52(6.51%)	133(16.6%)	25.77

Discussion

The viral wart was the most prevalent viral skin disease (39.1%), which was similar to other study in Iraq [4], but differ from western countries in which the herpes simplex and herpes zoster infections was the most prevalent [1]. Also the viral wart

appears to be the disease of young adults, while in other countries it is the disease of childhood, which may be due to misuse of immune suppressive drugs e.g. corticosteroid [1, 2].

The plane wart was the most common wart (19.1%) and it affect the adolescent ,

while the common wart was the second common type (16.6%) and it affect the young adults , which was similar to other studies [3,4].

Condilomata accuminata appears to be a rare disease in this study, compared with other western studies, because it is regarded as a sexually transmitted disease and there is religious limitation on prevalence of this disease in our country [4,6].

In this study the chicken pox (varicella) infection was more prevalent than western countries (8.6%) , most probably due to insufficient health services like vaccination and it affect the children younger than 10 years which was similar to other Western studies, while the prevalence of herpes zoster infection was similar to other studies(8%) and affecting middle age group (3,4).

Molluscum contagiosum in this study appears to be a common disease (9%) and affect the young adult age which is differ from other studies in prevalence and age of onset, as it is the disease of childhood , which may be due to poor hygiene and some social habits (4,5).

Gianotti Crosti syndrome and pityriasis rosea also appear to be a common disease in this study, which was similar to other studies in prevalence and age of onset (9.4% and 9.9%) respectively [2,7,9,10].

The study shows that herpes simplex infection was a relatively common disease (8.4%), predominantly labial type (H.S.V.-1) (7.9%) and of childhood age , while the genital type (H.S.V-2) was a rare disease (0.5%) and affecting adults age group , which was differ from western countries in which the genital infections was highly prevalent , but affect the same age group, because it was regarded as a sexually transmitted disease and there was a religious and social prohibition of illegal sex [1,8].

All other viral skin disease appears as a rare diseases in this study which correlate

with other studies, most probably due to prophylactic vaccination used during infancy and childhood age [1,2,9,11,12,13].

Conclusion

It was concluded that the viral skin diseases still a common health problem in Iraq and the viral wart, varicella zoster, pityriasis rosea, Gianotti Crosti, molluscum contagiosum and herpes simplex infection were the commonest diseases while the exanthematous viral skin infections were the rare diseases, with some age and gender variation.

Recommendation

A more study was recommended to confirm that certain viral skin diseases e.g. pityriasis rosea and Gianotti Crosti syndrome were a true viral diseases rather than a reactive state, by using PCR technique.

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