# Commonest Skin Infections in Two Dermatology Outpatient Clinics in Baghdad City

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**Abstract:**

**Background:** Skin diseases are among the most frequent causes of morbidity in developing countries, showing high prevalence in the general population and being the sixth most frequent cause of outpatient visits to health facilities**.**

**Objective:** To assess the occurrence of different types of infectious skin diseases among a sample from dermatology outpatients' clinics.

**Methods:** This descriptive cross sectional study was conducted in the dermatology outpatient clinics of the two main teaching hospitals in Baghdad city (Al-Yermouk and Baghdad Teaching Hospital) during the period from January through April 2012 using a consecutive non probability sampling technique by pooling all the patients attending the dermatology outpatient clinic in both hospitals on daily basis during the four month period of the study.

**Results**: The most prevalent type of skin infections in the sample was viral (40.1%) followed by bacterial (21.6%), and the least was parasitic infections (17.5%) Males were affected approximately double than females especially in respect to viral and parasitic infections. The highest age group affected was 16-30 years, followed by those less than 15 years, the least affected were those above 60 years. In almost all age groups the most prevalent infection was viral infection.

**Conclusion:** Viral infections are the commonest skin infections, warty lesions are the main subtype of viral infections and the commonest of all skin infections.

**Keywords: Skin infections, Baghdad, Iraq**

**Introduction:**

Skin diseases are among the most frequent causes of morbidity in developing countries, showing high prevalence in the general population and being the sixth most frequent cause of outpatient visits to health facilities**.**[1] The majority are of infectious origin [2], and of these bacterial infections are the most common and lead to the most hospitalizations.[3] Skin infections are extremely frequent worldwide and their epidemiological features vary according to the geographical area and have changed in the last decades.[4] Researchers stated that in 2002 nearly 18% of all cancers worldwide were attributable to skin infection, with infection-related malignancies being more common in the developing world than in the developed world in terms of both absolute numbers and the proportion of all cancers attributable to infection (26% vs. 7.7%).[5]

**The objective of the study is to assess the occurrence of different types of infectious skin diseases among a sample from dermatology outpatient clinics.**

**Methods:**

This descriptive cross sectional study was conducted in the dermatology outpatient clinics of the two main teaching hospitals in Baghdad city (Al-Yermouk and Baghdad Teaching Hospital) during the period from January through April 2012 using a consecutive non probability sampling technique by pooling all the patients attending the dermatology outpatient clinic in both hospitals on daily basis during the four month period of the study. After taking the verbal consent of the patients; a full history was taken from each (after the diagnosis has been settled by the senior dermatologist), then a thorough clinical examination was done with the supervision of the dermatologist focusing on the number, color, size, morphology, distribution, and site of the lesion. The diagnosis was primarily based on the clinical background, however, wet mount preparations, Wood`s light examination and swap for smear and cultures were done in some cases to reach the final diagnosis.

**The questionnaire:**

The questionnaire included two parts: socio-demographic (age, sex, residence, marital status, educational level, and occupation) and clinical information (chief complaint, duration, previous management, previous history of similar conditions, and family history of skin diseases.

**Results:**

The results showed that the most prevalent type of skin infections in the sample was viral (40.1%) followed by bacterial (21.6%), fungal (20.8%) and parasitic infections (17.5%). The frequency of sub-types of infections is shown in table (1).

Males were affected approximately double than females especially in respect to viral and parasitic infection as shown in table (2) which also shows the distribution according to age and type of infection. The highest age group affected was 16-30 years, followed by those less than 15 years; the affected were those above 60 years. In almost all age groups the most prevalent infection was viral infection.

Estimation of skin infections according to place of residency showed that the vast majority of the patients were from urban areas (96.2%). In respect to the occupation; the highest incidence was among house wives (20%) as shown in table (3).

Regarding the educational level, the study explored that the highest group of patients were those who

have the primary level of education; and the main type of infection was viral (of which, wart was the main subtype). In respect to marital status; the highest incidence was among the married (40%) – (not tabulated).

The study showed that the predominant site for infection is the face, and the head and neck have the least predilection site for the infection as shown in table (4).

**Table 1: Frequency of types and subtypes of skin infections in the study sample**

| Subtype of infection | Frequency | Percentage |
|---|---|---|
| **Viral:** | 401 | 40.1 |
| Warts | 208 | 20.8 |
| Mollascum Contagiosum | 116 | 11.6 |
| Chicken pox | 30 | 3 |
| Herpes group | 47 | 4.7 |
| **Bacterial:** | 216 | 21.6 |
| Impetigo | 18 | 1.8 |
| Folliculitis | 54 | 5.4 |
| Cellulites | 16 | 1.6 |
| Secondary bacterial infection | 10 | 1.0 |
| Boil | 118 | 11.8 |
| **Fungal:** | 208 | 20.8 |
| *Tinea crures* | 44 | 4.4 |
| *T.pedis* | 8 | 0.8 |
| *T.corporis* | 122 | 12.2 |
| *T.versicolor* | 26 | 2.6 |
| *T.capitus* | 4 | 0.4 |
| Candidiasis | 4 | 0.4 |
| **Parasitic and protozoal:** | 175 | 17.5 |
| Scabies | 141 | 14.1 |
| Leshmaniasis | 34 | 3.4 |
| **Total** | 1000 | 100.0 |

**Table2: Distribution of skin infections according to age, gender and residence**

| **Age (years)** | **Type of Infection** | | | | | | | | **Total** |
|---|---|---|---|---|---|---|---|---|---|
| | **Viral (n=401)** | | **Bacterial (n=216)** | | **Fungal (n=208)** | | **Paras/Protozoa (n=175)** | | |
| | No | % | No | % | No | % | No | % | |
| **<15** | 131 | 49.1 | 42 | 15.7 | 32 | 12.0 | 62 | 23.2 | 267 |
| **15-29** | 182 | 37.8 | 136 | 28.3 | 90 | 18.7 | 73 | 15.2 | 481 |
| **30-44** | 46 | 31.9 | 28 | 19.4 | 46 | 31.9 | 24 | 16.7 | 144 |
| **45-59** | 24 | 32.4 | 8 | 10.8 | 26 | 35.1 | 16 | 21.6 | 74 |
| **=>60** | 18 | 52.9 | 2 | 5.9 | 14 | 41.2 | - | - | 34 |
| | **$\chi^2$=80.083; P value=0.0001** | | | | | | | | |
| **Gender Males** | 306 | 45.6 | 130 | 19.4 | 98 | 14.6 | 137 | 20.4 | 671 |
| **Females** | 95 | 28.9 | 86 | 26.1 | 110 | 33.4 | 38 | 11.6 | 329 |
| | $\chi^2$=67.632; P value=0.05* | | | | | | | | |
| **Residency Urban** | 387 | 40.2 | 210 | 21.8 | 196 | 20.4 | 169 | 17.6 | 962 |
| **Rural** | 14 | 36.8 | 6 | 15.8 | 12 | 31.6 | 6 | 15.8 | 38 |
| | **$\chi^2$=2.99; P value=0.000** | | | | | | | | |

**Table 3: Distribution of skin infections according to occupation**

| Occupation | Type of Infection | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | Viral (n=401) | | Bacterial (n=216) | | Fungal (n=208) | | Paras/Protozoa (n=175) | | |
| | No | % | No | % | No | % | No | % | |
| **Governmental** | 97 | 51.9 | 40 | 21.4 | 38 | 20.3 | 12 | 6.4 | 187 |
| **Skilled** | 10 | 35.7 | 10 | 35.7 | 2 | 7.1 | 6 | 21.4 | 28 |
| **Unskilled** | 46 | 36.5 | 30 | 23.8 | 20 | 15.9 | 30 | 23.8 | 126 |
| **Unemployed** | 20 | 21.1 | 20 | 21.1 | 32 | 33.7 | 23 | 24.2 | 95 |
| **Students** | 80 | 46.0 | 34 | 19.5 | 18 | 10.3 | 42 | 24.1 | 174 |
| **Housewives** | 62 | | 38 | | 80 | | 24 | | 204 |
| | **$\chi^2$=120.925; P value=0.000** | | | | | | | | |
| **There rest 186 were children** | | | | | | | | | |

**Table 4: Distribution of skin infections according to site of the lesion**

| Site of the lesion | Type of Infection | | | | | | | | Total |
|---|---|---|---|---|---|---|---|---|---|
| | Viral (n=401) | | Bacterial (n=216) | | Fungal (n=208) | | Paras/Protozoa (n=175) | | |
| | No | % | No | % | No | % | No | % | |
| **Head & neck** | 25 | 43.9 | 12 | 21.1 | 20 | 35.1 | - | - | 57 |
| **Face** | 168 | 60.4 | 84 | 30.2 | 22 | 7.9 | 4 | 1.4 | 278 |
| **Chest & back** | 10 | 17.2 | 28 | 48.3 | 20 | 34.5 | - | - | 58 |
| **Abdomen & genitalia** | 32 | 29.1 | 18 | 16.4 | 42 | 38.2 | 18 | 16.4 | 110 |
| **Upper limbs** | 54 | 45.0 | 18 | 15.0 | 28 | 23.3 | 20 | 16.7 | 120 |
| **Lower limbs** | 48 | 44.4 | 26 | 24.1 | 26 | 24.1 | 8 | 7.4 | 108 |
| **More than one site** | 64 | 23.8 | 30 | 11.2 | 50 | 18.6 | 125 | 46.5 | 269 |
| | **$\chi^2$=352.3; P value=0.0001** | | | | | | | | |

**Discussion:**

The results showed that the main type of skin infection was viral, this differs from the result of a study in Egypt which showed that fungal infections were the most common (17.2%) with Tinea Versicolor (10.1%) and Pityrosporum Folliculitis (5.7%) constituting the main portion.[6]

In the current study; the least frequent type was parasitic, this differs from the result of another study which showed that fungal infections were the commonest. [7]

On the other hand; in analyzing the subtypes of infections, there were 17 subtypes; the main of which were: wart, scabies and fungal infections. A study done in Tahran showed that of the 201 patients; 87(43.28%) patients had fungal infections. [8]

Parasitic infestations ranked the fourth group of skin infection in this study. They represented about 17.5% of all cases. The major two infestations were scabies and cutaneous leishmaniasis. Regarding scabies; in addition to its endemicity, it witnesses epidemic outbreaks every now and then. This may support many other previous Iraqi studies done in the last two decades regarding both conditions.[9] This high incidence of scabies in Iraq may be due to social, economic and environmental corruption that has occurred in the last two decades; that led to poverty, lack of hygiene and overcrowding. Cutaneous Leishmaniasis represents the second parasitic infestation among Iraqi people next to scabies. It is an old endemic disease that was very common in Baghdad, and that's why it was called Baghdad Boil Lozenges. [10]

Viral infections were the leading group of all skin infections. This might be due to that viral infections are more communicable than other types of infections, or that subtypes of viral infection are tiny lesions and painless (like warts) so the patients ignore them leading to more dissemination.[11] Viral warts and Molluscum Contagiosum were the commonest viral skin infections in our sample. This finding coincides with published literatures which stated that viral warts have an increasing incidence in other countries.[12]

The average annual incidence of herpes zoster in the United States has been estimated at 2-4/1000, [13] while the current study showed that herpes infections formed 47/1000 and were less common than wart and Mollescum Contagiousum.

The results also showed that males were more frequently affected than females, may be because Iraqi males have more outdoor activities making them more exposed to skin infections, this result

matches the results of another study done in Timor-Leste in which males were affected more than females (42.3% vs. 34.0%, respectively).[7]

Regarding age groups; the age group 16-30 years showed the highest prevalence of skin infection probably because they are the main active group regarding outdoor work and sexual activity. On the other hand, patients above 60 years were the least affected age group. This is similar to the results of other studies. [6]

The results also explored that urban people are more affected than rural (96.2% urban versus 3.8% rural); this might be due to the fact that health services are more available and utilized in urban than in rural areas.[14]

The highest prevalence was seen among the housewives; the explanation is that housewives (due to their home duties) are more exposed to hazardous factors (chemicals and detergents) that help in the occurrence of skin infections. [15]

The most affected site was the face (27.8%), the explanation is that warts (the commonest infection that was seen in the sample) are found mainly in the face (plane wart and common wart), and the same thing for molluscum.[14] The other explanation is that lesions on the face make patients seek medical help (for cosmetic and social reasons). The least affected site was the head and neck, may be due to the anatomical nature of them that makes them less susceptible to infection, also they are in less contact with skin of others making contagious disease less likely.[12]

**It can be concluded from this study that viral infections are the commonest skin infections, warty lesions are the main subtype of viral infections and the commonest of all skin infections in our sample.**

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