

## Pediatric Consultations to the Center of Dermatology and Venereology, Medical City Teaching Hospital During the Period from February 2017 till April 2018

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### ABSTRACT:

#### BACKGROUND:

Skin Problems are very common in children attending pediatric hospitals, there are few studies of pediatric consultations to dermatological clinics and none from Iraq.

#### OBJECTIVE:

to describe the pediatric consultations attending the Center of Dermatology, Medical City Teaching Hospital.

#### PATIENTS AND METHODS:

This is a descriptive cross-sectional study. It was conducted at the Center of Dermatology and Venereology, Medical City Teaching Hospital between February 2017 and April 2018. All consultations from Children Welfare Teaching Hospital were included. Consultations were made for either inpatients or patients consulting the outpatient clinic of that hospital. Detailed information including gender, age, site of lesion, duration, symptoms, past medical history, drug history, family history, vaccination and developmental history were recorded. The requesting department for inpatient consultations was also recorded. Any diagnostic procedure performed at the dermatology center was also recorded.

#### RESULTS:

A total of 207 pediatric consultations were referred to the Center of Dermatology during the study period of 14 months. One hundred twenty seven consultations were outpatient consultations, and 80 were for hospitalized children. Male to female ratio was (1.3:1) in outpatient consultations and (1.2:1) for inpatient consultations. The largest number of outpatients consultations 48 patients (37.8%) were children aged (6-12 years), and 29 patients (36.3%) of hospitalized patients were in preschool age (1-5years). Referred children with pure dermatological complaint constituted the majority of the outpatient consultations (77.2%) while they constituted (26.3%) of the inpatient consultations. The other reason for referral was dermatological manifestations that were related to the general illness, this constituted (15%) of the outpatient consultations and (30%) of the inpatient consultations. About (7.9%) of outpatient consultations and (43.%) inpatient consultations were referred for skin diseases unrelated to their systemic illness. The largest number of consultations came from the general pediatric department (30%), followed by hematology and oncology department (21.25%). Biopsy was performed in (3.9%) of the outpatient consultations and (10%) of the inpatient consultations. Infectious skin diseases were the most frequent established diagnosis in both outpatient and inpatient consultations (37% and 38.75% respectively), Drug eruptions were the second most common established diagnosis in the inpatient consultations (8.75%), while papulosquamous eruptions were the second common diagnosis in the outpatient consultations (16.5%). Genetic diseases were seen in (6.3%) of outpatient consultations and (8.75%) of inpatient consultations.

#### CONCLUSION AND RECOMMENDATIONS:

Pediatric consultations constituted an important part of the dermatologist work. This is the first study of pediatric consultations to a department of dermatology in Iraq. Dermatological training is recommended for pediatricians so that they can deal with simple dermatological problems. Pediatric dermatology is an emergent and important subspecialty in dermatology.

**KEYWORDS:** Pediatric, consultation, Dermatology, Center

### INTRODUCTION:

Problems of the skin are very common in

children, and it is therefore important to be able to assess the skin in a logical and organized manner when examining children. In fact, skin conditions constitute at least 30 % of all outpatients' visits to a pediatrician<sup>(1)</sup>

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A number of cutaneous conditions occur almost exclusively in infants and children. In addition there are many hereditary and congenital skin conditions (genodermatoses) that are usually presented during childhood. Most of the common infectious diseases of childhood have cutaneous manifestations<sup>(1)</sup>.

Most of the studies which deal with pediatric dermatological consultations were retrospective depending on registered data<sup>(2,3,4)</sup>. The prevalence of skin diseases among school children has been described in Iraq<sup>(5)</sup> and in outpatients in Kuwait<sup>(6)</sup>. However there are few studies of pediatric consultations to dermatological clinics<sup>(7)</sup> and none from Iraq. A child may present to a pediatrician with primary skin disease or he may have a systemic disease with skin manifestations. Sometimes skin diseases such as warts or scabies are discovered during routine clinical assessment<sup>(8)</sup>.

### AIM OF STUDY

This is a descriptive study of all pediatric consultations attending the Center of Dermatology from Children Welfare Teaching Hospital..

### PATIENTS AND METHODS

This is a descriptive cross-sectional study. It was conducted at the Center of Dermatology and Venereology, Medical City Teaching Hospital between February 2017 and April 2018. All consultations from Children Welfare Teaching Hospital were included. Consultations were made either inpatients at Children Welfare Teaching Hospital or for patients consulting the outpatient clinic at that hospital.

Detailed information including gender, age, site of lesions, duration, symptoms, past medical history, drug history, family history, obstetrical history, vaccination and developmental history were recorded. The requesting department for inpatient consultations was also recorded. Any diagnostic procedures performed at the dermatology center such as Woods lamp examination, dermoscopy, KOH examination of skin scraping, biopsy with histopathological examination and any hematological or biochemical tests ordered were all recorded. The final diagnoses were noted.

Dermatological disease groups were categorized based on the textbook Hurwitz Clinical Pediatric Dermatology<sup>(9)</sup>. All data collected were analyzed using the descriptive statistics SPSS version 24.

### RESULTS:

There are 117 consultations for male and 90 consultations for females with male to female ratio of 1.3:1 (Table1). Children (5-12 year) old were the most common age group for outpatient consultations and toddler/preschool age (1-5year) were the most common age group for inpatient consultations (Table2). Regarding reason for referral for outpatient consultations, primary cutaneous disease was the most common cause for referral while for inpatient consultations; dermatological complaint not related to the primary medical condition was the most common cause for referral (Table3). The general pediatric department was the most common referring department (Table4). Skin biopsy was the most common diagnostic procedure performed for outpatient consultations (5) biopsies and inpatient consultations (8) biopsies (Table5). The most frequent skin disease was cutaneous infection for outpatient and inpatient consultations (Table 6), and viral infections were the most common infections. Scabies was the main reason for referral in 10 outpatient consultations and 7 inpatient consultations. It is interesting to note that drug eruptions were diagnosed in 2 outpatient and 7 inpatient consultations and histiocytosis was diagnosed 3 outpatients and 4 inpatients while genodermatosis was diagnosed in 8 outpatient and 7 inpatient consultations. Figure (1) shows an interesting genetically determined disease (trichorrhexis nodosa). Figure(2) shows dermatological emergency (purpura fulminans). Regarding reason for referral for outpatient consultations, primary cutaneous disease was the most common cause for referral while for inpatient consultations; dermatological complaint not related to the primary medical condition was the most common cause for referral (Table3). The general pediatric department was the most common referring department (Table4). Skin biopsy was the most common diagnostic procedure performed for outpatient consultations (5) biopsies and inpatient consultations (8).

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biopsies (Table5). The most frequent skin disease was cutaneous infection for outpatient and inpatient consultations (Table 6), and viral infections were the most common infections. Scabies was the main reason for referral in 10 outpatient consultations and 7 inpatient consultations. It is interesting to note that drug eruptions were diagnosed in 2 outpatient

and 7 inpatient consultations and histiocytosis was diagnosed 3 outpatients and 4 inpatients while genodermatosis was diagnosed in 8 outpatient and 7 inpatient consultations. Figure (1) shows an interesting genetically determined disease (trichorrhexis nodosa). Figure(2) shows dermatological emergency (purpura fulminans).

**Table (1) Gender distribution**

Gender	Outpatient consultations		Inpatient consultations	
	No.	%	No.	%
Male	72	56.69	45	56.25
Female	55	43.31	35	43.75
Total	127	100	80	100

**Table (2) Age distribution**

Age group	Outpatient consultations		Inpatient consultations	
	No.	%	No.	%
Neonates( < 1month)	6	4.72	7	8.75
Infants (1month > 1year)	31	24.41	22	27.5
Toddler/preschool ( 1> 5year)	32	25.2	29	36.3
Children( 5 > 12 year)	48	37.8	18	22.5
Adolescent ( 12> 18year)	10	7.87	4	5
Total	127	100	80	100

**Table (3) Reasons for referral**

	Outpatient consultations		Inpatient consultations	
	No.	%	No.	%
Dermatological complaint is the primary compliant	98	77.2	21	26.25
Dermatological compliant related or may be related to primary compliant	19	15	24	30
Dermatological compliant not related to primary compliant	10	7.87	35	43.75
Total	127	100	80	100

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**Table(4) Inpatient pediatric consultations according to requesting department**

Requesting department	No.	%
General pediatrics	24	30
Hematology &Oncology	17	21.25
Pediatric Surgery	7	8.75
Gastroenterology	6	7.5
Emergency room	6	7.5
Neurology	7	8.75
Respiratory	4	5
Nephrology	3	3.75
Endocrinology	1	1.25
neonatal care unit	5	6.25
Total	80	100

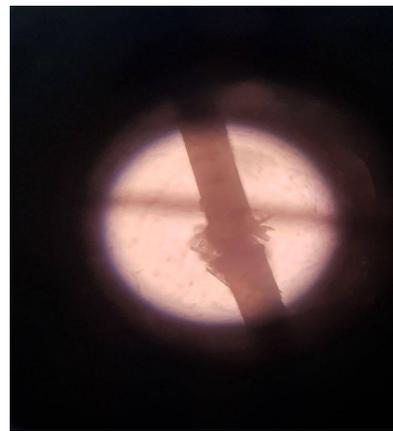
**Table (5) diagnostic procedures for pediatric dermatological consultations**

	Outpatient consultations	Inpatient consultations
Diagnostic procedures	No.	No.
Skin biopsy	5	8
Laboratory investigations	2	6
Woods light	2	3
Dermoscopy &trichoscopy	2	1
Skin scraping	5	-
Microscopical hair examination	1	2
Genetic counseling	1	1
Total	18	21

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**Table (6) The most frequent skin diseases established in pediatric consultations**

disease distribution	Outpatient consultations		Inpatient consultations	
	No.	%	No.	%
Viral infections	18	14.2	16	20
Bacterial infections	6	4.72	6	7.5
Fungal infections	8	6.3	2	2.5
Infestations	12	9.45	7	8.75
Protozoa	3	2.36	-	-
Papulosquamous diseases	21	16.5	5	6.25
Urticaria	9	7.09	-	-
Drug eruptions	2	1.57	7	8.75
Hair disorders	9	7.09	4	5
Genetic dermatosis	8	6.3	7	8.75
Dermatitis and eczematous eruptions	3	2.36	5	6.25
Histiocytosis	3	2.36	4	5
Pigmentary disorders	5	3.94	-	-
Vascular diseases	5	3.94	-	-
Erythema multiforme-Steven Johnson syndrome	-	-	5	6.25
Miscellaneous	17	13.4	7	8.75
Still undiagnosed	-	-	5	6.25
Total	127	100	80	100



**Figure(1) A: A 5year old child with easily broken scalp hair, B: microscopical hair examination shows hair cortex splitting into strands like the end of two brushes pushed into one another. Diagnosis: (trichorrhexis nodosa)**



**Figure(2): A 7 year old female admitted to the emergency department with disturbed consciousness and sudden appearance of large ecchymotic areas. Diagnosis( Purpura fulminans)**

### DISCUSSION

In the present study consultations to the dermatology center from Children Welfare Teaching Hospital were studied. There were 127 outpatient consultations and 80 consultations for hospitalized children. Similar studies for inpatient consultations were carried out in other countries<sup>(2, 3, and 4)</sup>. However no study mentioned pediatric outpatient consultations. This may be because these pediatric hospitals usually have dermatology outpatient clinics while this is not present in Children Welfare Hospital.

Regarding the reason for referral, dermatological problems were the main complaint in the majority of the outpatient consultations (77.2%) while they constituted (26.3%) of the inpatient consultations. This high percentage of outpatient consultations with pure dermatological problems may be explained by the fact that many parents consulted a general pediatric hospital in the first place because they thought that children with skin problems were cared for there. This stresses the importance of dermatological outpatient services in pediatric general hospitals. The other reason for referral was manifestations that were related to the general illness. This constituted (15%) of the outpatient consultations and (30%) of the inpatient consultations. In the latter group 10 patients had no primary pediatric diagnosis and in 5 of them the dermatological opinion helped in establishing the diagnosis.

Ten outpatient consultations (7.9%) and 35 inpatient consultations (43.75%) were referred for skin diseases unrelated to their systemic illness, most of diagnoses were simple skin

diseases ( pityriasis alba, scabies, tinea, discoid eczema, ..). The largest number of outpatients consultations 48 (37.8%) were children aged (6-12 years), and the majority of the hospitalized patients 29(36.3%) were in preschool age (1-5years). These findings are different from Asfar (Turkey)<sup>(2)</sup>, Sirinavas et al (India)<sup>(3)</sup> and McMahon et al (USA)<sup>(4)</sup> in which infants were the largest group. The largest number of consultations came from the general pediatric department (30%). This is similar to studies from India and California<sup>(3, 4)</sup>. This may be because this department has the largest number of admissions.

The second most common requesting department was the hematology and oncology (21.25%). The possible explanation is that most of these patients needed to stay more in hospital also they were usually immunologically suppressed making them more susceptible for skin infections and atypical presentations of common skin diseases. A total of 110 outpatient consultations (86.6%) and 59 inpatient consultations (74.75%) were diagnosed only by history and clinical examination, while only 18 patients (14.4%) from the first group and 21 patients from second group (24.25%) needed further diagnostic procedures. This shows the importance of clinical training in establishing the diagnosis in pediatric skin diseases. It is estimated that a skilled pediatric dermatologist can diagnose and manage correctly more than 80% of patients based only on medical history and clinical examination<sup>(10)</sup>.

In the present study infectious skin diseases were the most frequent established diagnosis in both outpatient and inpatient consultations (37% and 38.75% respectively). This is consistent with their high prevalence in Iraqi children<sup>(1)</sup>, and also consistent with the study by McMahon et al (2012) from USA who found that skin infections were commonest cause of referral (19%) out of 472 referral<sup>(4)</sup>, also Srinivas et al (2015) found that skin infections were the commonest cause of referral (23.6%) in a study of 486 Indian children<sup>(3)</sup>, while Asfar (2017) found that allergic skin diseases were the commonest cause of referral in 539 inpatient consultations in Turkey<sup>(2)</sup>.

Drug eruptions were the second most common established diagnosis in the inpatient consultations (8.75%) which was seen only in 2 cases of outpatient consultations. The common drugs implicated were the antibiotic group which was frequently prescribed by pediatricians, this was also noted in a study from India<sup>(3)</sup>. The most common drug eruption was morbilliform exanthem, and this was difficult to be differentiated from viral exanthems for pediatricians and even for dermatologists especially when the child was febrile and on multiple drugs. The genetic disorders accounted for 6.3% of the outpatient consultations and 8.75% in inpatient consultations. Most of these disorders were referred for confirming the pediatric diagnosis or for further management. Epidermolysis bullosa was the most common genetic disorder that needed admission and management by both pediatricians and dermatologists in both groups. The same result was recorded in a study from Turkey in which genodermatoses were the fourth most commonly diagnosed group in which epidermolysis bullosa was the most common diagnosis<sup>(2)</sup>. While in a study from India genodermatoses were the third group and ichthyotic disorders were the commonest<sup>(3)</sup>.

The diagnosis could not be reached in 5 hospitalized children despite thorough investigations. They presented with both cutaneous and systemic manifestations, and further follow up was needed to establish

the definite diagnosis.

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