

## Hand Dermatitis among Patients Visited the Dermatology Clinic of Al-Sadder Teaching Hospital, Misan Province

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Article Info	Abstract
Received 23/Sep./2017  Accepted 17/Oct./2018	<p>Hand dermatitis is a common dermatosis which a polymorphic inflammatory reaction pattern that involving the skin layers (epidermis and dermis). There are a lot of factors that causing it with clinically wide range of manifestations. It is the most common occupational dermatological condition. Females are at increasing risk of the hand dermatitis development. Chemical and physical topical agents can be irritants, causing damage to skin cell if applied for adequate time concentration. The study aim is to determine prevalence and important common factors that affect the hand dermatitis among patients attended Dermatological Outpatient of Al-Sader Teaching Hospital, Misan, Iraq. A cross-sectional study including a total number of patients with generalized eczema in the body were 840. The number of the patients had hand eczema were 240. Study was carried out during the period from 1st of January 2016 to 1st of November 2016. The study was conducted in Dermatology Outpatients Clinic of Al-Sadder Teaching Hospital in Misan Governorate. Diagnosis was made by dermatologist based on clinical manifestations.</p> <p>In our study there were certain risk factors affected the patients presented with hand dermatitis were identified. These factors included family history, history of atopy, occupation, marital status, systemic drug intakes other than dermatological use, hand involvement whether unilateral or bilateral, gender, it's relation with age and onset of eczema. The study showed that (17.5%) had positive family history of hand dermatitis, (30%) had positive history of atopy and negative drug history had(77.5%). Patients with bilateral hands involvement (82.5% ) and the highest percentage in female at or older than 40years old(35.48% ).The highest percentage was among males in the (30-39 and above 40 years) age group with 44.44% for each group. Hand dermatitis more common in house wife then in building worker and nurse with married females have higher percentage 74% than non-married ones 26%. we concluded that hand dermatitis prevalence was higher in female patients at age of 20 to 29 years with one third of them had history of atopy, especially in house wives with excessive exposure to daily cleaning topical chemicals.</p> <p><b>Keywords:</b> hand dermatitis, Misan, atopy, building worker, house wives.</p> <p><b>الخلاصة</b></p> <p>لتهاب الجلد اليدي هو مرض جلدي شائع وهو نمط تفاعل التهابي متعدد الأشكال يشمل طبقات الجلد (البشرة والأدمة). هناك الكثير من العوامل التي تسببها مع مجموعة واسعة سريريا من المظاهر. هذا هو أكثر الأمراض الجلدية المهنية شيوعا. الإناث في خطر متزايد من تطور التهاب الجلد اليدي. يمكن أن تكون العوامل الموضعية الكيميائية والفيزيائية مهيجة ، مما يتسبب في تلف لخلايا الجلد إذا تم تطبيقه على تركيز زمني مناسب. تهدف الدراسة إلى تحديد الانتشار والعوامل المشتركة الهامة التي تؤثر على التهاب الجلد اليدي بين المرضى الذين راجعوا العيادة الخارجية للأمراض الجلدية بمستشفى الصدر التعليمي في ميسان ، العراق. تم إجراء دراسة مقطعية بما في ذلك إجمالي عدد المرضى الذين يعانون من الأكزيما المعممة في الجسم(840). كان عدد المرضى الذين يعانون من الإكزيما اليديوية 240 حالة. وقد أجريت الدراسة خلال الفترة من 1 يناير 2016 حتى 1 نوفمبر 2016. أجريت هذه الدراسة في عيادة الأمراض الجلدية الخارجية بمستشفى الصدر التعليمي في محافظة ميسان. تم إجراء التشخيص من قبل طبيب الأمراض الجلدية على أساس الاعراض السريرية. في دراستنا كان هناك بعض عوامل الخطورة التي تؤثر على المرضى الذين تم تقديمهم مع التهاب الجلد اليدي. تضمنت هذه العوامل تاريخ العائلة ، وتاريخ الحالة الاستثنائية ، والمهنة ، والحالة الاجتماعية ، وتاريخ اخذ الأدوية ، بخلاف استخدام الجلد ، ومشاركة اليد سواء أحادية الجانب أو ثنائية ، أو الجنس ، أو العلاقة مع العمر ، أو بداية الإصابة بالأكزيما. وأظهرت الدراسة أن (17.5%) لديهم تاريخ عائلي إيجابي من التهاب الجلد اليدي (30%) لديهم تاريخ إيجابي للإصابة وكان التأخير السلبي للتاريخ (77.5%). المرضى الذين لديهم توزيعات ثنائية لليدي (82.5%) وأعلى نسبة في الإناث عند عمر 40 سنة أو أكثر (35.48%). وكانت أعلى نسبة بين الذكور في الفئة العمرية (30-39)</p>

سنة وما فوق 40 سنة) بنسبة 44.44% لكل منهم. مجموعة. التهاب الجلد اليديوي الأكثر شيوعا في ربات المنزل ثم في عمال البناء والممرضات مع الإناث المتزوجات لديها نسبة أعلى 74% من غير المتزوجات 26%. استنتجت الدراسة إلى أن انتشار التهاب الجلد اليديوي كان أعلى في المرضى الإناث في سن 20 إلى 29 سنة مع تلتهم لديهم تاريخ من التحسس ، وخاصة في ربات المنزل مع التعرض المفرط لمواد التنظيف اليومية الموضعية.

## Introduction

Eczema and Dermatitis terms are used interchangeably, denoting a polymorphic inflammatory reaction pattern involving the epidermis and dermis. There are many causative factors and a wide range of clinical manifestations. Acute eczema/dermatitis is characterized by severe pruritus, erythema, vesiculation and weeping skin while chronic eczema/dermatitis, is characterized by pruritus xerosis, lichenification, and hyperpigmentation with or without skin fissuring [1]. Every year, about 10% of the general population has at least one episode of hand eczema, and at any time about 5% of the population is affected. The genetic risk factors for the development of hand eczema are unknown. It is the most common occupational dermatological condition, accounting for more than 80% of all occupational dermatitis. Females are at increased risk for the development of hand dermatitis, when increased environmental exposures increase female's risk (child-care, housecleaning, etc. [1]. By definition the term hand dermatitis implies that the dermatitis is largely confined to the hands, with only minor involvement of other areas [2]. Hand eczema causes discomfort and, because of its location, interferes significantly with normal daily life activities and work. Hand eczema is common in industrial occupations: it can threaten job position if the severity of the inflammation cannot be controlled [3]. Both daily chemical and physical topical agents can be irritants, causing skin cell damage if applied for sufficient period of time and in adequate concentration. Irritant contact hand dermatitis (ICD) occurs when defense or repair capacity of the skin structure is unable to maintain normal skin integrity and function or when penetration of chemical(s) induces an inflammatory response [4]. High-risk occupations include those that entail wet work, and those with exposure to potential allergens. These nine "high-risk" occupations include bakers, hairdressers,

dental surgery assistants, kitchen workers/cooks, butchers, healthcare workers, cleaners, doctors/ dentists/ veterinarians, and laboratory technicians. Cement workers have a high rate of hand eczema related to contact allergy [1].

In a study it was reported that the prevalence of hand dermatitis was approximately 5.4% and was twice as common in females as in males. The most common type of hand dermatitis was irritant contact dermatitis (35%), followed by atopic hand eczema (22%) and allergic contact dermatitis (19%) [3]. Prolonged exposure, sometimes over years, is needed for weak irritant substances to cause dermatitis, usually of the hands and forearms. Detergents, alkalis solvents, cutting oils and abrasive dusts are common culprit substances. There is a wide range of susceptibility; those with very dry or fair skins are especially vulnerable. Past or present atopic dermatitis doubles the risk of irritant hand eczema developing [5]. The diagnosis and management of hand dermatitis are a challenge. There is almost no association between clinical manifestation pattern and etiological factors. There are other diseases, such as psoriasis and lichen planus, that may appear eczematous. Many patients diagnosed with hand eczema actually have psoriasis [3]. The multifactorial etiology of hand dermatitis adds to the complexity of both the diagnosis and treatment. Co-existent disorders, such as atopy, dyshidrosis, lichen planus, psoriasis and dermatophytosis, may be encountered in those patients [6].

One of the most important steps in treating hand eczema is identifying and avoiding the exposure to allergens or irritants that affect patient with hand dermatitis. This includes wearing of protective gloves and using appropriate topical emollients, moisturizing, steroids creams and ointments [1], [12].

The aim of this study is to determine the prevalence and the important common factors that affect the hand dermatitis among patients at-

tended Dermatological Outpatient of Al-Sader Teaching Hospital.

## Patients and Methods

A cross-sectional study with an analytic element. This was carried out during the period from 1st of January 2016 to 1st of November 2016. The study was conducted in Dermatology Outpatients Clinic of Al-Sadder Teaching Hospital in Misan governorate. The targeted population was all the patients attended to Dermatology Outpatients Clinic of Al-Sadder Teaching Hospital in Misan governorate who complaining hand dermatitis.

Data was collected using a special formula sheet consists of age, gender, onset, occupation, marital status, family history, history of atopy, medical drug history and pattern of involvement (Uni- or bilateral hands). Diagnosis was made by dermatologist based on clinical manifestations. The study protocol was reviewed; approval and official permission were obtained from the Misan medical college, university of Misan to conduct the present study. Data were presented in form of figures and tables of numbers and percentage. The analysis of data was carried out using the available Statistical packages for social science, version 18.0 (SPSS-18.0).

## Results

The total numbers of patients with generalized eczema in the body were 840. The number of the patients had hand eczema were 240. Prevalence equal (28.57%). Certain risk factors affected on the patients presented with hand dermatitis that attended to Dermatology Outpatients Clinic of Al-Sadder Teaching Hospital in Misan Province was studied. These factors included family history, history of atopy, occupation, marital status systemic drug intake, hand involvement whether unilateral or bilateral, gender and its relation with age and onset of eczema. The study founds (17.5%) of patient had positive family history and (82.5%) had negative family history while (30%) of patient had positive history of atopy, and (70%) had negative family history. Regarding drug histo-

ry; the patients with negative drug history had (77.5%) and the patients with positive history (22.5%). As shown in Table 1. The patients with bilateral hands involvement was (82.5%) and the patients with unilateral hand involvement was 17.5% as in Table 2.

Table 1. frequency of patients according to history of family, atopy and Drug of hand dermatitis.

Item		Frequency	Percentage
Family history	Positive	42	17.5
	Negative	198	82.5
	Total	240	100
History of atopy	Positive	72	30
	Negative	168	70
	Total	240	100
Drug history	Positive	56	22.5
	Negative	186	77.5
	Total	240	100

Table 2. The pattern of hand involvement.

Hand involved	Frequency	Percentage
Unilateral	42	17.5
Bilateral	198	82.5
Total	240	100

Figure 1 shows highest percentage in females at or older than 40 years old (35.48%), the highest percentage among males in the (30-39 and above 40 years) with 44.44% for each group. The Figure 2 shows highest onset of hand eczema in females at (20-29) years old (32.25%), and the highest male onset at (10-19) years old about (44.44%). Figure 3 show that the hand dermatitis more common in house wife then building worker, nurse and students. While in Figure (4) show married patients have higher percentage (74%) than non-married patients (26%).

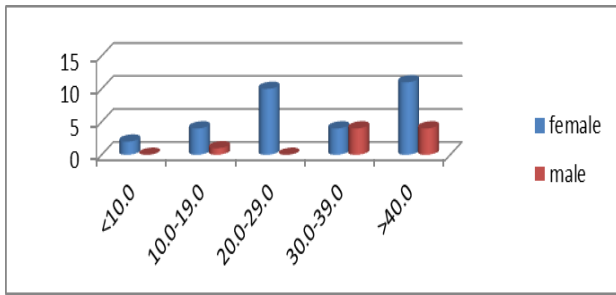


Figure 1. Percentage of hand dermatitis among males and females according to age groups.

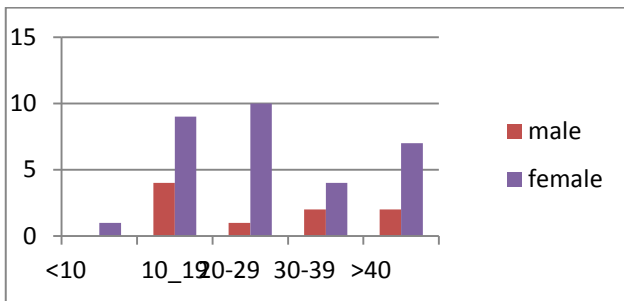


Figure 2. Onset of hand eczema in males and females within the age groups.

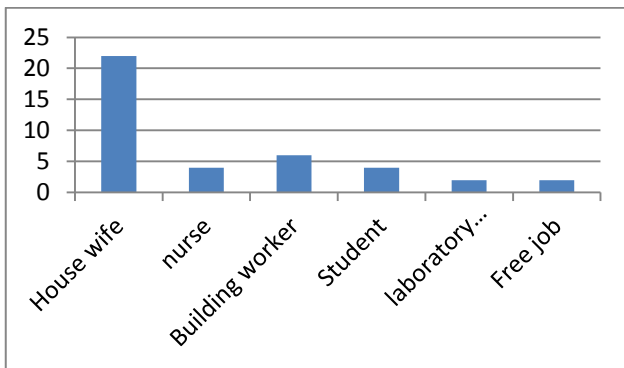


Figure 3. Hand dermatitis according to the jobs status.

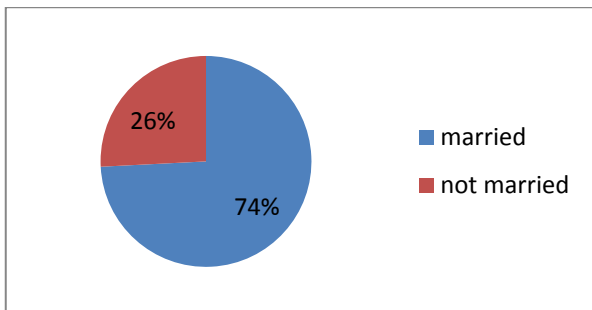


Figure 4: Percentage of hand dermatitis according to the marital status of females.

## Discussions

Hand dermatitis is a common skin disease.<sup>(1)</sup> It occurs often with a long-lasting and relapsing courses, that may lead to physical and psycho-

logical disability with psychological impact on social relationships, daily life activities and work.<sup>(3,6)</sup>

In our study, the overall prevalence of hand dermatitis showed 28.57% higher in female than in male patients in all age groups in about 2-3 folds. The onset of hand dermatitis started at an early age group before 10 years old in female and increased in severity at age group between 20-29 years which represent the age of maximum physical activity and exposure to irritant chemicals especially in the married females with hand dermatitis 74% while single 26%. That indicate the gender play fundamental role and this suggested by the actual number of hand washes and exposure to detergent performed per work shift directly influences the risk of developing hand dermatitis. This result was similar to the result of study showed the hand eczema is twice as frequent in women as in men, partly because of diverse exposure patterns [7]. For similar reasons, another study showed that healthcare workers are at increased risk of developing hand eczema [8].

Regarding the patients with recent or previous history of atopic dermatitis, our study showed that the percentage of atopic dermatitis were 30% who had hand dermatitis and this is in consistence with other studies that show atopic symptom was the single most important risk factor for the development hand eczema in general population and especially in employees who perform wet work in hospitals [9][10]. Also the skin atopy at least doubles the effects of irritant exposure and, thus, doubles the risk in occupations where hand eczema is a common problem in employees with past or present atopic dermatitis and some of them had poor long-term prognosis for hand eczema and they get improvement after the job change[11][12]. The prevalence of sick leave in healthcare professionals with hand eczema is more than that in general population[13]. Some of drugs seem to be aggravate the severity of hand dermatitis in some hypertensive patients on diuretics 22.5% this attributed to the side effect of these medication on the skin integrity that lead to increase the dryness of skin and aggravate the skin condition[14]. The effect of family history was an important factor in our patients where 17.5% had positive family history.

## Conclusions

In conclusion the prevalence of hand dermatitis was higher in female patients at age of 20 to 29 years with one third of them had history of atopy, especially in house wives with excessive exposure to daily cleaning topical chemicals.

### Acknowledgment

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