

# Biopsy-based Prevalence of Non-malignant Skin Disorders in Kermanshah City, Iran

Mazaher Ramezani<sup>1</sup>, Rozhano Mahmoodi<sup>2</sup>, Afshin Almasi<sup>3</sup>, Asad Vaisi-Raygani<sup>4</sup>, Masoud Sadeghi<sup>5,\*</sup>

<sup>1</sup>Molecular Pathology Research Center, Emam Reza University Hospital, Kermanshah University of Medical Sciences, Kermanshah, Iran

<sup>2</sup>Students Research Committee, Kermanshah University of Medical Sciences, Kermanshah, Iran

<sup>3</sup>Department of Biostatistics and Epidemiology, School of Public Health, Kermanshah University of Medical Sciences, Kermanshah, Iran

<sup>4</sup>Department of Clinical Biochemistry, Kermanshah University of Medical Sciences, Kermanshah, Iran

<sup>5</sup>Medical Biology Research Center, Kermanshah University of Medical Sciences, Kermanshah, Iran

\*Corresponding author: Sadeghi\_mbrc@yahoo.com

**Abstract Background:** Skin disorders (SDs) consists of 12.4% of all diseases seen by the family physicians and a number of them need to biopsy. The aim of the study is to evaluate the epidemiology of non-malignant SD in the West of Iran. **Materials and Methods:** Between Jun 2012 to Des 2014 in a descriptive study, 401 patients with non-tumoral SD referred to the Special Clinic of Dermatopathology, Kermanshah city, Iran. We assessed age, sex, referral year, residential place, referral season and clinical characteristics of SD in the patients. **Results:** The mean age at diagnosis for patients was 38 years. We divided patients based on age to 8 groups that most patients were between 25 to 34 years. One hundred and seventy six patients (44%) were male. Two hundred and thirty eight patients (86%) were living in Kermanshah city. Autumn and then summer were the most referral season of patients with 30% and 29%, respectively. Four SDs with the most prevalence were discoid lupus erythematosus, psoriasis, lichen planus and morphea with 17.5%, 16.3%, 9.7% and 5%, respectively. *Scalp (23.8%), cheek (21.1%) and hand (10.7%) were the most sites of biopsy, respectively.* **Conclusions:** The definition of skin disorder prevalence is vital in planning for prevention and therapy in healthcare services. We can also use the results, for more focusing on more prevalent biopsy-based diagnoses in education of pathology residents in academic centers.

**Keywords:** skin disorder, epidemiology, pathology, Western Iran

**Cite This Article:** Mazaher Ramezani, Rozhano Mahmoodi, Afshin Almasi, Asad Vaisi-Raygani, and Masoud Sadeghi, "Biopsy-based Prevalence of Non-malignant Skin Disorders in Kermanshah City, Iran." *American Journal of Medical Sciences and Medicine*, vol. 5, no. 3 (2017): 49-52. doi: 10.12691/ajmsm-5-3-2.

## 1. Introduction

Skin disorders consist 12.4% of all diseases seen by the family physicians [1]. Epidemiologic data are important to understanding the implications of human disease. An understanding of the incidence of specific diseases is fundamental to decision making regarding allocation of resources for clinical care and research. Population-based studies are the gold standard for the study of epidemiology and yield the most accurate and extensible estimates of incidence. Reports demonstrate a rise in the incidence of the majority of skin disorders over the last decades. The reasons for the increase in the incidence of many of the skin disorders is unknown but may include a true change in incidence, changes in patterns of diagnosis over the decades, greater physician awareness of the diagnoses, and other specific risk factors for each of the reported skin disorders [2]. The development of skin disorder is influenced by external factors, such as geographic region, climate, socioeconomic status, and personal habits, and internal factors, such as age, gender, and heredity. Therefore, the prevalence of SDs differs between regions because of these factors [3]. SDs are the most common presenting

health problems and take a remarkable public health problem in developing and developed countries [4]. Recent prevalence data are favorable considering the reported increase in the prevalence of specific SDs (e.g., atopic dermatitis and skin cancer) [5,6]. Skin biopsy is a method for confirmation of clinical diagnoses in dermatology.

The aim of the study is to evaluate epidemiology of non-malignant SD based on the results of biopsy in the West of Iran.

## 2. Materials and Methods

From Jun 2012 to Des 2014 in a descriptive study, 401 patients with non-tumoral SD referred for histopathological diagnosis of skin biopsies to the Dermatopathology Special Clinic, Kermanshah city, Iran. We assessed age, sex, referral year, residential place, referral season and clinical characteristics of SD in the patients.

## 3. Results

The mean age at the diagnosis for patients was 38 years (Table 1). We divided patients based on the age to 8

groups that most patients were between 25 to 34 years. One hundred and seventy six patients (44%) were male and 225 (56%) were female. Two hundred and thirty eight patients (86%) were living in Kermanshah city. One hundred and thirty eight patients (35%), 137(34%) and 126 (31%) referred to Clinic in 2012, 2013 and 2014, respectively. Autumn and then summer were the most referral season of patients with 30% and 29%, respectively.

**Table 1. The baseline variables in patients with non-tumoral skin disease (n=401)**

Variables	n(%)
Age, year	
Mean	38
Age group, year	
<15	14(3.5)
15-24	71(17.7)
25-34	103(25.7)
35-44	65(16.2)
45-54	78(19.5)
55-64	42(10.5)
65-74	24(5.9)
>74	4(1)
Sex	
Male	176(44)
Female	225(56)
Referral year	
2012	138(35)
2013	137(34)
2014	126(31)
Residential place, n=276	
Kermanshah city	238(86)
Other cities of Kermanshah Province	25(9)
Village	13(5)
NA	125
Referral season	
Spring	78(20)
Summer	117(29)
Autumn	121(30)
Winter	85(21)

NA: not available.

Table 2 shows the clinical characteristics of SD in the patients with non-tumoral SD. Four SDs with the most prevalence were discoid lupus erythematosus, psoriasis, lichen planus (LP) and morphea with 17.5%, 16.3%, 9.7% and 5%, respectively. Out of 170 patients, duration of disease for 42.9% and 27.1% patients was 0 to 6 months and 7 to 12 months. Out of 656 lesions, *itch* (17.3%), *plaque* (17%), *erythema* (14.5%), *scale* (12.5%), *papule* (11.7%) and *alopecia*(10.4%) were the most, respectively. *Scalp* (23.8%), *cheek* (21.1%) and *hand* (10.7%) were the most sites of biopsy, respectively.

**Table 2. Clinical characteristics of skin disease in the patients with non-tumoral skin disease (n=401)**

Variables	n(%)
<b>Primary lesions</b>	
<i>Itch</i>	114(17.3)
<i>Plaque</i>	111(17)
<i>Erythema</i>	95(14.5)
<i>Scale</i>	82(12.5)
<i>Papule</i>	77(11.7)
<i>Alopecia</i>	68(10.4)
<i>Scar</i>	24(3.7)
<i>Hyperpigmentation</i>	18(2.7)
<i>Patch</i>	15(2.3)
<i>Nodule</i>	14(2.1)
<i>Atrophy</i>	13(2)
<i>Bulla</i>	10(1.5)
<i>Keratosis</i>	8(2)
<i>Ulcer</i>	7(1.1)
<b>Site of biopsy</b>	
<i>Scalp</i>	94(23.8)
<i>Cheek</i>	83(21.1)
<i>Hand</i>	42(10.7)
<i>Foot</i>	31(7.9)
<i>Thigh</i>	26(6.6)
<i>Abdomen</i>	25(6.4)
<i>Leg</i>	24(6.1)
<i>Forearm</i>	23(5.8)
<i>Flank</i>	14(3.5)
<i>High back</i>	12(3.1)
<i>Unknown Location in face</i>	11(2.8)
<i>Nose</i>	5(1.2)
<i>Lower</i>	4(1)
<i>NA</i>	7
<b>Type of skin disease</b>	
<i>Discoid lupus erythematosus</i>	70(17.5)
<i>Psoriasis</i>	65(16.3)
<i>Lichen planus</i>	39(9.7)
<i>Morphea</i>	20(5)
<i>Eczema</i>	16(4)
<i>Seborrhoeic dermatitis</i>	16(4)
<i>Pityriasis lichenoides chronica</i>	13(3.2)
<i>Dermatitis herpetiformis</i>	9(2.2)
<i>Lichen sclerosis et atrophicus</i>	8(2)
<i>Atopic dermatitis</i>	8(2)
<i>Pemphigus</i>	8(2)
<i>Verruca</i>	7(1.7)
<i>Vasculitis</i>	7(1.7)
<i>Others</i>	115(28.7)
<b>Duration of disease, month</b>	
0-6	73(42.9)
7-12	46(27.1)
13-24	17(10)
25-36	7(4.1)
37-48	6(3.5)
49-60	4(2.4)
>60	17(10)
<i>NA</i>	231

Abbreviation: NA, not available.

## 4. Discussion

We present the epidemiology of the skin disorders based on the skin biopsy data in the west of Iran which is different, in some aspects, from the data obtained merely from clinical impression. Many of the previous studies considered clinical diagnosis by dermatologist for epidemiologic assessment but with no confirmatory skin biopsy evaluation by dermatopathologist. This may be the reason for controversy in the prevalence of diseases in non-confirmed clinical diagnoses. In some cases like acne vulgaris treatment is based on clinical diagnosis and skin biopsy is not an ordinary approach. In one study in Australia, a total of 1457 respondents from a random selection of adults aged 20 years and over from Victoria, Australia were analyzed. Atopic dermatitis was 6.9%, seborrheic dermatitis 9.7%, asteatotic dermatitis 8.6% and psoriasis 6.6% [7]. Another study [8] reported that the mean age of patients with SD was 28.01±16.2 years, 40.4% male. The most referral season was in summer (33.4%) but in our study autumn and then summer was the most referral season with very close results (30% versus 29%). Acne, androgenetic alopecia and infections were the most common observed causes respectively. We know that many cases with these three leading causes of admission, are not referred for biopsy. Two studies [9,10] reported that more patients were women. Onayemi et al. (2005) in Nigeria [11] analyzed seven hundred and forty-six patients with SD. The median age was 27 years. Eczema, acne, papulosquamous, and pigmentary skin disorders were observed in 14.1%, 7.0%, 6.4%, and 6.0% of cases, respectively. Another study in Nigeria [12], in patients with SD, the male: female ratio was 1.3:1 and eczemas/dermatitis were found to be the most prevalent (24.9%) followed by infections/infestations (19.1%). A study in Turkey included a total of 11,040 new patients with 12,174 skin problems that 55.7% were female and 44.3% male. The most commonly encountered diseases were: acne (13.1% of patients), fungal infections (8.5%), contact dermatitis (8.5%), urticaria (8.3%), psoriasis (5.5%), viral warts (4.1%), lichen simplex chronicus (3.0%), callus, atopic dermatitis, and seborrheic dermatitis (2.2% each). While the rate of psoriasis was higher than those reported in South Africa and England, it was lower than those in the neighboring countries of Turkey, Iraq, Greece, and Iran. Dermatitis and eczema were the most commonly encountered SDs in previous studies conducted in Iraq, Saudi Arabia, Yemen, Mali, South Africa, Japan, Egypt, Nigeria, Peru, and Greece [3]. Fatani et al. [13] reported that higher age group peak was 20-39 years for patients with skin disorders and in our study, was 24-35 years. The results were close to each other. Hartshorne ST in South Africa [14], reported that eczema was the commonest disease, accounting for one-third of all diagnoses in the total population surveyed. In black patients eczema was 32.7% and in white patients was 17.8%. He wrote in Indian patients, eczema was 30.4% and psoriasis 9.6%. Olsson et al. [15] concluded that the prevalence of LP in the genital area is much lower than lichen sclerosus that our study confirmed it. In this study, discoid lupus erythematosus (17.5%), psoriasis (16.3%) and LP (9.5%) had the highest prevalence. Eczema and seborrheic dermatitis, each one were 4%. Therefore, the prevalence

of psoriasis in our area (Western Iran) may be higher than other studies, but for eczema is lower than other studies. This may be due to higher rate of biopsy-based diagnosis of psoriasis than eczema, not higher prevalence. Discoid lupus erythematosus was the most common of SD in our study that in other studies, based on our information and searching, this disease has not been mentioned. This may also be due to higher rate of biopsy in scarring lesions including scarring alopecia and scars of the face, not higher prevalence. The mean age was 38 years and higher than other studies. Therefore, in our area, SD is lower in young people or younger people do not intend to seek medical care. In more studies and also in our study, the percentage of women was more than men for SD. This may be due to higher rate of medical care seeking in women.

## 5. Conclusions

The definition of skin disorder prevalence is vital in planning for prevention and therapy in healthcare services. We can also use the results, for more focusing on more prevalent biopsy-based diagnoses in education of pathology residents in academic centers.

## Acknowledgements

The authors gratefully acknowledge the Research Council of Kermanshah University of Medical Sciences (Grant Number: 94337) for the financial support.

This work was performed in partial fulfillment of the requirements for (General Physician) of (Rozhano Mahmoodi), in Faculty of Medicine, Kermanshah University of Medical Sciences, Kermanshah, Iran. Also, the authors thank *Clinical Research Development Center, Imam Reza Hospital*, for its cooperation.

## References

- [1] Verhoeven EW, Kraaijaat FW, van Weel C, van de Kerkhof PC, Duller P, van der Valk PG, et al. Skin diseases in family medicine: prevalence and health care use. *Ann Fam Med*. 2008; 6(4):349-54.
- [2] Andersen LK, Davis MD. The epidemiology of skin and skin-related diseases: a review of population-based studies performed by using the Rochester Epidemiology Project. *Mayo Clin Proc*. 2013; 88(12):1462-7.
- [3] Bilgili ME, Yildiz H, Sarici G. Prevalence of skin diseases in a dermatology outpatient clinic in Turkey. A cross-sectional, retrospective study. *J Dermatol Case Rep*. 2013;7(4):108-12.
- [4] Saw SM, Koh D, Adjani MR, Wong ML, Hong CY, Lee J, et al. A population-based prevalence survey of skin diseases in adolescents and adults in rural Sumatra, Indonesia, 1999. *Trans R Soc Trop Med Hyg*. 2001; 95(4):384-8.
- [5] Wolkenstein P, Grob JJ, Bastuji Garin S, Ruzyczynski S, Roujeau JC, Revuz J. French people and skin diseases: results of a survey using a representative sample. *Arch Dermatol*. 2003; 139(12): 1614-9.
- [6] Hanstock TL, O'Mahony JF. Treatment seeking in young women with acne. *Dermatol Psychosom*. 2003; 4: 194-9.
- [7] Plunkett A, Merlin K, Gill D, Zuo Y, Jolley D, Marks R. The frequency of common nonmalignant skin conditions in adults in central Victoria, Australia. *Int J Dermatol*. 1999; 38(12): 901-8.
- [8] Hajheydari Z, Golpou M. Prevalence of skin disorders in Sari, 2003-2004. *J Mazandaran Univ Med Sci*. 2007; 17(57): 94-8.
- [9] Baghestani SH, Zare SH, Mahboobi AA. Skin disease pattern in Hormozgan. Iran. *J Dermatol*. 2005; 44(8):641-5.

- [10] Stren RS. Office base care of dermatologic disease. *J Am Acad Dermatol.* 1986; 14(2): 286-90.
- [11] Onayemi O, Isezuo SA, Njoku CH. Prevalence of different skin conditions in an outpatients' setting in northwestern Nigeria. *Int J Dermatol.* 2005; 44(1): 7-11.
- [12] Nnoruka EN. Skin diseases in south-east Nigeria: a current perspective. *Int J Dermatol.* 2005; 44(1): 29-33.
- [13] Fatani MI, Al-Afif KA, Hussain H. Pattern of skin diseases among pilgrims during Hajj season in Makkah, Saudi Arabia. *Int J Dermatol.* 2000; 39(7): 493-6.
- [14] Hartshorne ST. Dermatological disorders in Johannesburg, South Africa. *Clin Exp Dermatol.* 2003; 28(6): 661-5.
- [15] Olsson A, Selva-Nayagam P, Oehler MK. Postmenopausal vulval disease. *Menopause Int.* 2008; 14(4): 169-72.