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EPIDEMIOLOGICAL AND CLINICAL STUDIES FOR PREVALENCE OF SCABIES IN THE DISPLACED PEOPLE CAMPS OF IRAQ

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ABSTRACT

Scabies in Iraq usually caused by *Sarcoptes scabiei var. hominis.* The burden of scabies is highest in tropical countries, scabies in recent years appear to become endemic in Iraq, probably due to densely populated areas that people lives with high contact level between them as in the busy districts, soldiers in military barracks, many jails and prisons in the period which followed the US occupation of Iraq until the present time. Overcrowded camps such as Boca jails and other prisons that are established after the war contributed in scabies distribution in these sites. Other camps for the displaced people that spread through different areas such as Amiriyah al-Fallujah, Khanaqin, Diyala province and outskirts of Erbil city have been showing a very high level scabies infection between the people that lived in

Keywords: scabies, internally displaced camps, Iraq

Introduction

Scabies is particularly common in resource-poor communities with crowded living conditions. Some studies have suggested higher rates in urban areas and an increased incidence during winter months (Al-Shaha, 2015). The disease is also more common in institutional environments such as prisons and old-age homes, where outbreaks of the disease are frequently reported. Spreading of scabies usually occurs during unfavorable events such as wars, floods, earthquakes, and other natural and human-induced critical times (Al-Shaha, 2015). It has been reported an increase in scabies infection in Iraq, especially after USA occupation (2003). Despite the increasing numbers of infected persons that followed up by the physicians in the general hospitals or dermatological clinics, there are four master studies only have been performed especially in Baghdad, Mosul, Tikrit and Al-anbar to addressed some of epidemiological and immunological aspects provided by the patients records of dermatology clinic in the general hospitals (Al-Rawi, 1990; Alaa, 2002; Murtada, 2001; Al-shaha, 2015). Other (PHD) studies done by (Al-Rubayi, 2001) and (Al-Samarai, 2009) in Basrah and Tikrit, respectively shows that there is 3.3% of Basrah population have infected with scabies while only 1.2% of Tikrit population have scabies infection. Aims of the current study were to review theTo Epidemiological and Clinical Studies for Prevalence of Scabies in the Displaced People Camps. This study has been carried out in Al-Anbar province which is located in the West of Iraqi capital "Baghdad". The data was provided by Al-Fallujah General Hospitals, and the primary health care centers of the camps for displaced people in Al-Amiriyah city during the period of seven months (1 March 2017 and 1 September 2017) Cases of scabies were diagnosed according to their conventional criteria. As following the Iraq invasion, people prefer to go to clinics located near to their homes or camps. Have been studying (107) persons who were seeking medical care of their own accord or referred by general practitioners to the hospitals. All these patients who presented to the dermatology clinics in AL-Anbar province were between the periods of (1 March 2017 and 1 September 2017). Cases of scabies were diagnosed according to their conventional criteria. During the study period, 107 patients with scabies were identified. The frequency was 55(51.4%) in females and 52(48.5%) in male, the highest age groups affected are aged (Childhood under 6 years) by 30 patient about (28.1%) followed by age group (10-20) by 26 patient about (24.2%) age group (30-40) by 22 patient about (20.5 %) then age group (20-30) by 19 patient about (17.7%) and, then finally (over 45 years) by 10 patient about (9.3%). Scabies infection is an epidemic disease and commonly found between Anbar's populations. The incidence rate of scabies among the females and males is equally and can affect all areas of the human body. Scabies is an international spreading disease especially in the Middle East countries, it caused by *Sarcoptes scabiei* and become a major health problem which accompanied humans over (2500) years ago. it can affect the skin and cause severe itching especially at night, although there is no precise figures for the number of annual infections in the world right now, but the World Health Organization (WHO) indicated in their survey on the prevalence of scabies (1971-2001) that spreading between (0.2% - 24%) of the world's population (Chosidow, 2006; Karin *et al.*, 2014).Scabies is common in many communities especially the middle east ones as it linked to poverty, overcrowding and personal poor hygiene, affects all age groups in different social,,cultural, ethnic stratification and it can affect both sexes equally, this disease evoke to be epidemic during the wars, famines and

overpopulation situations (Heukelbach *et al*., 2003; Walton and Currie, 2007; Amro and Hamarshed, 2012).

Some patients may be reluctant or shy in showing their affected health state to the doctor for treatment, Scabies can also affects the wild and domestic animals, in this case it called" mange". Scabies mites seems to have the ability to intruding the host and adapt physiologically with it, causing development of variant types of scabies, which may transmitted from infected animals to the humans without causing any clear symptoms (Mitra *et al*., 1995; Service, 2008). When the female Scabies mite settles on human skin, they begin "digging" in the surface layers of skin mainly the "Stratum corneum". The most risky skin types that can affected by the scabies mites easily are; the thin areas and wrinkled skin as the areas between the fingers, toes, wrists, elbows, penis, scrotum, buttocks and axillae. While in women, the breasts and nipples can also be affected. (Cargill, 1997; Hengge *et al*., 2006; Service, 2008; Levitt, 2008).

It is worth mentioning that the female Scabies need at least 30 minutes to select a place and enter the skin, then secrete enzymes that can degenerate the skin cells and facilitates access, at the same time feeding on the fluid that was forming during the cell degeneration. It can be moved in about (0.5-5) mm per day through the skin layers and During this movement, a single spiral tunnel (1-2) cm long will be developed (Arlian, 1989; Service, 2008).

As a result of a Scabies mite's infection, skin rash will developed because the immune response of human body has responded "allergic reaction" or "hypersensitivity ". The triggers of the immune response of the body could be one of these; female mites eggs on skins, feaces and saliva. These factors will lead to the itchy sensation. The main diagnostic features of scabies infection in addition to the rash are papules, vesicles, pustules and bubbles and presence of burrows as well as Nodules. (Shahab and Loo, 2003; Hengge *et al.*, 2006; Service, 2008; Levitt, 2008).

Material and Method

This study has been conducted in Al-Anbar province which is located in the West of Iraqi capital "Baghdad". The data was provided by Al-Fallujah General Hospitals, and the primary health care centers of the camps for displaced people in Al-Amiriyah city. As following the Iraq invasion, people prefer to go to clinics located near to their homes or camps. Have been studying (107) persons who were seeking medical care of their own accord or referred by general practitioners to the hospitals. All these patients who presented to the dermatology clinics in AL- Anbar province were between the periods of (1 March 2017 and 1 September 2017). Cases of scabies were diagnosed according to their conventional criteria.

Presumptive diagnosis of scabies was based on symptomatic complaints of pruritus and physical examination of the site involved.

Results

Gender distribution in scabies

In the current study, the result showed the difference in the prevalence of scabies between males and females was not statistically significant. It was showing that 55 females (51.4 %) have been diagnosed with scabies, while there are 52 male cases (48.5 %) have a positive diagnosis regarding the scabies infection Figure (1). We can conclude that there are no moral differences between sex and its relationship to the spread of scabies)**.** This result was in similar with the results of other studies in countries like Alrawi(1999) in Baghdad (Al-Sadr City), Al-samarai in Tiktite (2009), Al-Shaha (2015) in Alanbar). they referred that psychological differences between the sexes does not appear through the study and the distribution of infection between the sexes were equal a proximally.12 On the other hand, male predominance was observed in other Indian studies,13,14 and this might be related to private social factors in each society or country.

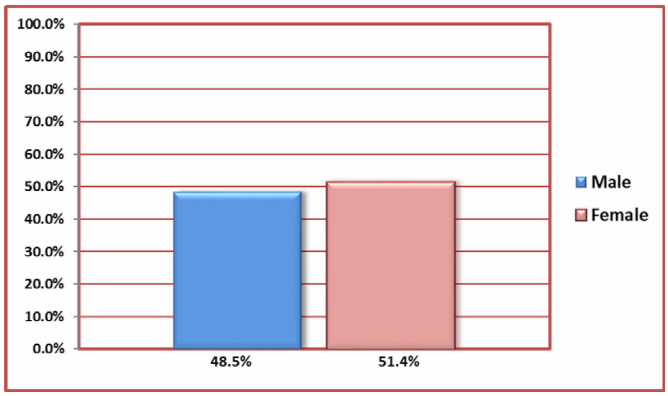

Fig. 1 : Showed Gender distribution in scabies diseas

Spreading of scabies according to the infected site of the body

Our research study that conducted in Al-Anbar city showed that almost all areas of the body are susceptible to scabies infection (the fingers and toes, abdomen and genitals with some scabies infection in the wrists and fingers and armpits, navel area).We found that the typical scabies infection features such as bubbles and blisters and papules have been showed on the abdominal area of 47 persons (43.9 %),Which represent the highest incidence rate and then the hand of 40 persons (37.3 %),Follows that the chest and breast area of 17 persons (15 %),While the results showed that the least number of infection was in the neck area and buttocks (genital) of only 3 persons (2.8 %) as shown in Figures (2) and ((3) A,B,C,D).These results were similar to Al-rawi (1990) in Baghdad, Rahdar (2008), Wang (2012), Al-shaha (2015) in Alanbar. They found that the highest incidence was in the abdominal area and then the chest, Follows that the hands, while the results showed that the lowest number of infection was in the male and female genital. But Hengge (2006) study showed that all areas of the body were susceptible to scabies infection with equal distribution of all the body parts. Al-rawi (1990) study was established in the medical city of Baghdad with 7488 infected cases. He founded the highest incidence of the scabies infection was in their hands (70.2 %) and torso (62.4%) while the lowest incidence percentage was in male and female genital (2.1%). 35% of the patients studied in this research were from (Al-Sadr City) which is known as an overcrowded city with poor service and cultural realities at that time. On the other hand Al-Shaha (2015) research that held in Al-Anbar city showed that all areas of the body were susceptible to scabies and ranged from the highest infection rates which can be affect mainly the abdominal area (43.3%) followed by the hands with (29.7%). On the other hand, the rest of the body sites such as the thighs, genital area and armpits, chest and breast

area, lower limbs and buttocks shares the (27%) that represent the less incidence rate.

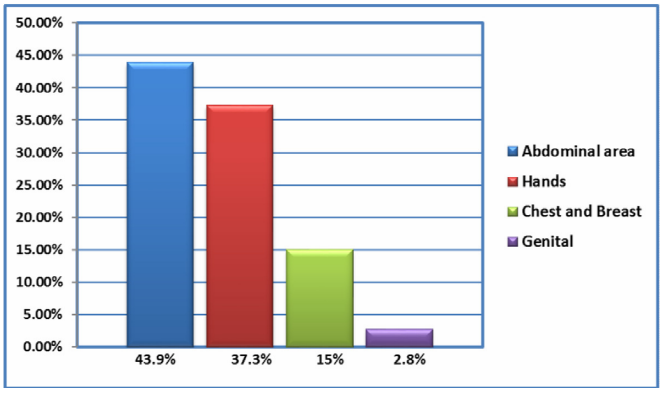

Fig. 2 : Relationship between scabies and the Areas of the body

Fig. 3 A, B : Classical Scabies for Abdominal's and Dorsal's man 21 years old in Alameriah Camp.

Fig. 3C : Nodular scabies in the axilla's child 5 years old in Al-anbar.

Fig. 3 D : Scabies in the foot's child 9 months old in Al-Fallugah Hospital.

The age distribution in scabies

Figure (4) that include a high spirits among the incidence of scabies and age groups, with the highest age groups affected are aged(Childhood under 6 years) by 30 patient about (28.1%) followed by age group (10-20) by 26 patient about (24.2%) and age group (20-30) by 19 patient about (17.7%) and age group (30-40) by 22 patient about (20.5 %), then finally (over 45 years) by 10 patient about (9.3%).Scabies affect all age groups. In developing countries this disease tend to have a higher incidence in preschool and adolescents, while in developed countries the prevalence is similar in all ages except probably the older population (Hay *et al.,* 2012). In Iraq, scabies tend to affect the younger age groups, more than 90% of patients belong to large families as Al-samarai in (2009) indicated that 91% of cases were younger than 45 years of age and the highest prevalence was in children (15.6%), followed by the age group (30 to 44 years by 14.7%) of total 1194 patients who presented to the clinic with complaints of skin diseases were included in the study. However Al-Shaha (2015) found that the maximum number of scabies infection was (less than six years) of age and the most common factors in this age group were in (relatives of the injured) and then (in the family detainees), followed by the age group (18-24), and factors most influence in this age group are (in the family detainees) and then follows it (travel and accommodation outside the home) and then following it (in family has a military), followed by the age group (24-30) was the most influential factor (in the family detainees) and then follows it (travel and accommodation outside of the house.

But Chirstopherson (1978) In Denmark and Fakoorzieba (2012) they referred that Scabies infection effect all age groups, a spatially in developed countries the prevalence is similar in all age, when groups who belong to large families and poor.

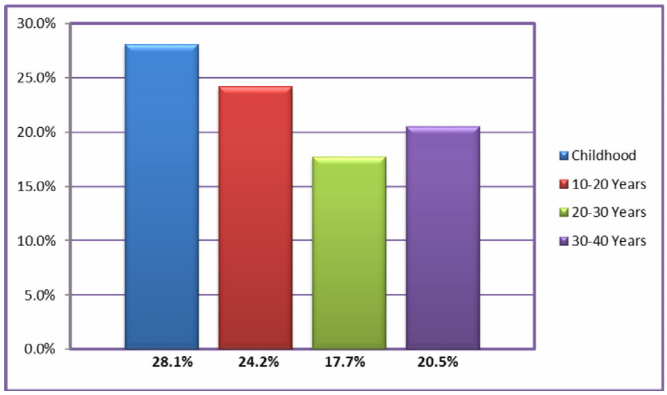

Fig. 4 : Relationship between scabies and the age group.

Seasonal variation in incidence of scabies

Figure (5) showed the highest number of Scabies infection was an increased incidence during cold months, a specially in (October and followed by the month of November and December), while the results that the least number of injuries was in the hot months a specially in (April, May and June). In most studies a seasonal variation has been noticed with preference for Autumn and winter especially with humidity and cold dry period as have been crowded indoors.

(Al-Shaha, 2015) indicated the highest number was in the month of October and followed by the month of

November and December, since the results were as followed: (21.8%), (18.6%), (15.3%), respectively, and the least number was in the month of April, May and June with percentage rate: (0.2%), (0.7%), (1.2%) respectively.

Through the review of the references and published research studies on the prevalence of scabies showed that scabies can stay alive and active for longer in cold weather. These results were similar to Mimouni (2003) in Israel, Savin, (2005) in Scotland, Heukel bach and Feldmeler (2006), Amro and Hamarsheh (2012) in Occupied Palestine) they noted that High incidence of scabies in cold weather.While Some researcheres have been noticed the number of Scabies infection was an increased incidence during seasons of Autumn and Winter.

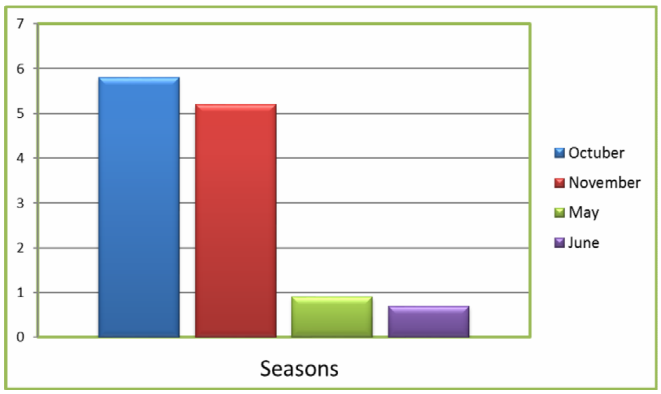

Fig. 5 : Seasons distribution of scabies disease.

Discussion

The present study indicated a high frequency of scabies in patients presenting to a Al-Fallujah General Hospitals, and the primary health care centers of the camps for displaced people in Al-Amiriyah city. Frequency was higher overall in children. In Iraq, previously reported studies indicated lower prevalence investigation. A community-based study in Basrah in the southern part of Iraq reported a prevalence of 3.3% (Al Rubaiy, 2001). In two other community-based studies performed in central Iraq in the city of Tikrit and in Kirkuk, a city in the northwest part of the country, the prevalence was reported at 1.2% and 2.76% respectively (Murtada, 2001; Alaa, 2002). In addition, in a hospital-based study performed in central Iraq in the city of Samara, the prevalence rate was 1.9% (Al-Samarai, 1995). Variations in the study population and their selection criteria make it difficult to determine the prevalence of scabies in the general population based on our study findings. However, our data show that scabies is common in patients presenting to a Amiriyah city camp, and this finding may be used as an indicator of the general population. In addition, scabies was common in prisoners, whose numbers have increased considerably in the Iraq invasion. Thus, we believe that our data suggest that there could be a potential epidemic outbreak of the disease in the future rates than those identified in our. Scabies is transmitted by direct skin-to-skin contact. The average host has only 5 to 10 mites. In crusted scabies, patients can be infected with millions of mites and are therefore highly contagious (Mathisen,1998).which may explain the high frequency of cases in family contacts of the prisoners (83.3%) as compared to primary cases (16.7%), since crusted lesions were found in 71% of the diagnosed cases. The contacts of primary cases that include other family members subsequently act as a source of infection. These individuals are usually neglected by health care professionals and as a result they may spread the disease in the family with increased risk of epidemics. Family members should be examined and treated as well. Control in endemic settings may also be achieved by mass treatment in prisons or endemic communities (Wendel, and Rompalo, 2002). Our results revealed that the prevalence of scabies in Al-Amiriyah city camps was 3.8%.This result is explained by the fact that Al-Amiriyah city camp had a high percentage of communities. This may be due to large family sizes, especially in extended families living in the same camp, which is a part of the culture in rural areas, leading to overcrowding and poverty; meanwhile, the absence of safe water supply in some camps also led to poor health habits (Alaa, 2002).

Conclusion

Scabies infection is an epidemic disease and commonly found between Anbar's populations. Its incidence rate among the females and males is equally. And can affect all areas of the human body. The scabies infection can spread throughout all months of the year, especially in the cold months with high incidence rate (December, October and November), while the less rates was noted in (April, May and June). Scabies can also affects individuals regardless of economic and social level but more infectious cases who were with low-income and Jails and prisons are more potential places that have high rate of incidence as well as transmission rate..

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