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Original Article

Assessment of 126 Cases of Sun Burn Visiting the Department- A Clinical Study

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ABSTRACT:
Introduction: Exposure to ultraviolet radiation (UVR) is the main risk factor for most skin cancers, and intermittent exposure to UVR from the sun and sunbeds, and sunburn history, are important factors in the aetiology of melanoma. The present study was conducted to assess the cases of sun burn in study population. **Materials & Methods:** The present study was conducted in the department of Dermatology. It included 126 cases of sun burn reported to the department. In all population, the site of sun burn, particular age group and residential area was considered. Area such as scalp, face, hand and neck was evaluated carefully for the presence of sun burn. **Results:** Age group 20-40 years had 40 males and 30 females while 40-60 years had 36 males and 20 females. The difference was significant (P- 0.01). The most common site was face (males- 20%, females- 15%) followed by neck (males- 12%, females- 14%), scalp (males- 11%, females- 12%) and hands (males- 6%, females- 5%). The difference was significant (P- 0.01). 18% males and 27% females were from urban area while 30% males and 25% females were from rural area. The difference was non- significant (P> 0.05). **Conclusion:** Sun burns are frequently encountered skin pathology. There is no predominant sex predilection. The occurrence of cases is quite common in age group 20-40 years.
Key words: Scalp, Sun burns, ultraviolet radiation.

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INTRODUCTION

Sunburn is a form of burn that affects living tissue, such as skin, that results from an overexposure to ultraviolet radiation, commonly from the sun. An excess of UV radiation can be life-threatening in extreme cases. Exposure of the skin to lesser amounts of UV radiation will often produce a suntan.[1]

Exposure to ultraviolet radiation (UVR) is the main risk factor for most skin cancers, and intermittent exposure to UVR from the sun and sunbeds, and sunburn history, are important factors in the aetiology of melanoma. It is estimated that 50%-80% of ultraviolet radiation are already being absorbed until the age of 18. The skin sensitivity due to the very young age, and the increased stay outdoors, seems that are associated with increased possibility of skin cancer presence in the adulthood. Children have also a less developed pigmentation and a self-defence system and consequently, have a risk of developing skin cancer later in their life.[2]

UVR exposures at an early age are particularly important for the development of cutaneous melanoma in adulthood. A recent meta-analysis of 51 studies found that ever reporting a sunburn during childhood almost doubled the risk for the development of cutaneous melanoma in adulthood. Common symptoms in humans and other animals include red or reddish skin that is hot to the touch, pain, general fatigue, and mild dizziness.[3]

Typically, there is initial redness (erythema), followed by varying degrees of pain, proportional in severity to both the duration and intensity of exposure. Other

symptoms can include nausea, edema, fever, itching, rash, chills, peeling skin, and syncope. Also, a small amount of heat is given off from the burn, caused by the concentration of blood in the healing process, giving a warm feeling to the affected area. Sunburns may be classified as superficial, or partial thickness burns.[4] The present study was conducted to assess the cases of sun burn in study population.

MATERIALS & METHODS

The present study was conducted in the department of Dermatology. It included 126 cases of sun burn reported to the department. All were informed regarding the study and written consent was obtained. Ethical clearance was taken before starting the study. General information such as name, age, etc. was noted. In all population, the site of sun burn, particular age group and residential area was considered. Area such as scalp, face, hand and neck was evaluated carefully for the presence of sun burn. P value less than 0.05 was considered significant.

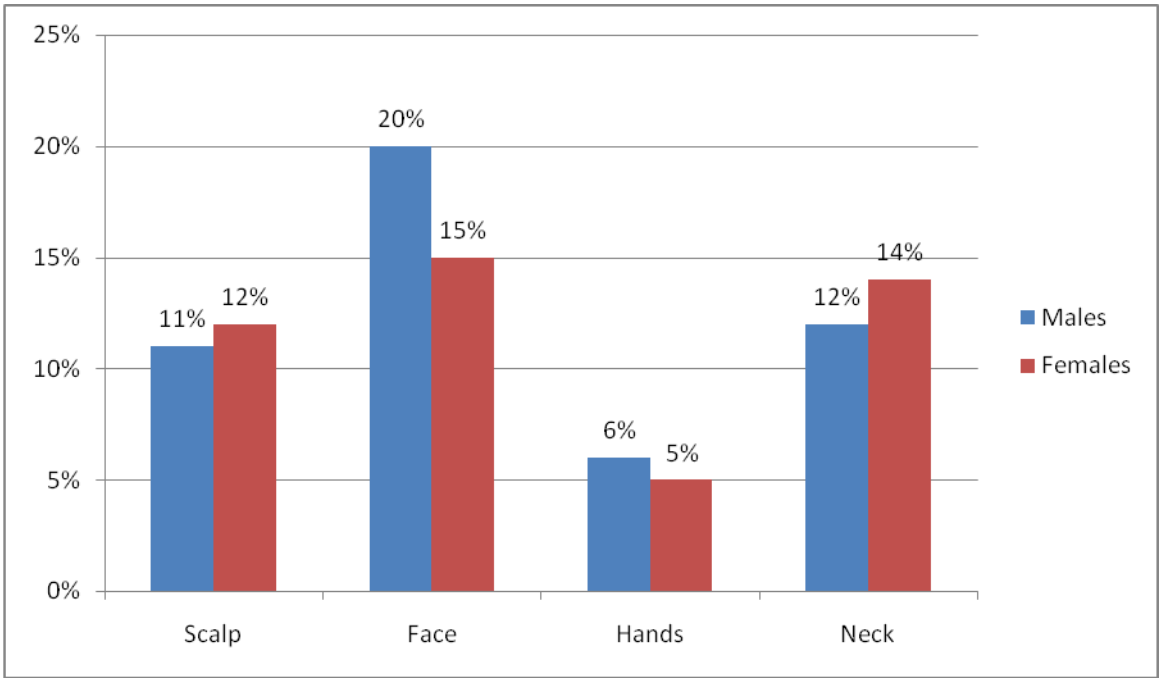
RESULTS

Table I Age wise distribution of patients

Age group	Males	Females	P value
20-40 years	40	30	
40-60 years	36	20	0.01
Total	76	50	

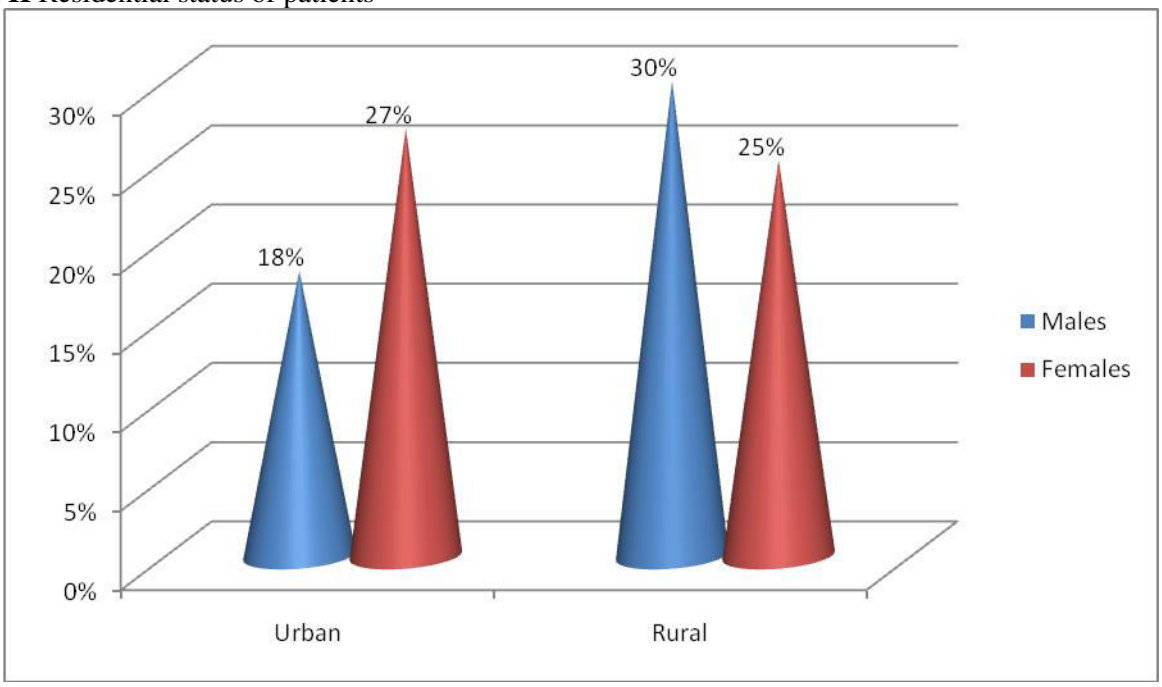
Table I shows that age group 20-40 years had 40 males and 30 females while 40-60 years had 36 males and 20 females. The difference was significant (P- 0.01).

Graph I Site of occurrence of sun burn



Graph I shows that most common site was face (males- 20%, females- 15%) followed by neck (males- 12%, females- 14%), scalp (males- 11%, females- 12%) and hands (males- 6%, females- 5%). The difference was significant (P- 0.01).

Graph II Residential status of patients



Graph II shows that 18% males and 27% females were from urban area while 30% males and 25% females were from rural area. The difference was non- significant (P> 0.05).

DISCUSSION

Sunburn is caused by UV radiation, either from the sun or from artificial sources, such as tanning lamps. This damage is mainly the formation of a thymine dimer. The damage is recognized by the body, which then triggers several defense mechanisms, including DNA repair to revert the damage, apoptosis and peeling to remove irreparably damaged skin cells, and increased melanin production to prevent future damage. Melanin readily absorbs UV wavelength light, acting as a photoprotectant.[5]

Age group 20-40 years had 40 males and 30 females while 40-60 years had 36 males and 20 females. This is similar to Cokkinides et al.[6] Autier et al[7] in their study of sunscreen use and increased duration of intentional sun exposure: still a burning issue found that excessive exposure to direct sun is the leading cause of sun burn. Similarly, non use of sun screen are other common causes.

A study by Brain et al[8] found that 35% of the study population had experienced sunburn. Sunburn was negatively associated with shade and clothing and positively with use of sunscreens. Author found no significant difference in sunscreen use between intentional tanners who experienced sunburn and those who did not. A larger fraction of unintentional tanners with sunburn than those who were not sunburnt had used sunscreen. Sunscreen was used to prolong the time spent in the sun by 66% of sunburnt people; however, we found no association between duration of sun exposure and sunscreen use.

Another study by Marie et al[9] found that the majority of population had dark hair and fair skin, whereas a significant percentage reported the existence of moles on face and their body. The sun burn incidence was high in adolescents and the younger pupils (41.9% *vs* 55.6%). The younger aged children who were living in an urban area had significantly higher rates of sun burn than those living in semi-urban areas (33.8% *vs* 24.8%, p=0.020). As far as the knowledge of pupils about the risks of sun radiation it was shown that the elementary school pupils had better knowledge than those at high school. Finally, those with better knowledge had the fewer sun burns.

Because of variations in the intensity of UV radiation passing through the atmosphere, the risk of sunburn increases with proximity to the tropic latitudes, located between 23.5° north and south latitude. All else being equal, over the course of a full year, each location within the tropic or polar regions receives approximately the same amount of UV radiation. In

the temperate zones between 23.5° and 66.5°, UV radiation varies substantially by latitude and season.[10] We found that most common site was face (males- 20%, females- 15%) followed by neck (males- 12%, females- 14%), scalp (males- 11%, females- 12%) and hands (males- 6%, females- 5%). 18% males and 27% females were from urban area while 30% males and 25% females were from rural area. This is in agreement with Miller et al.[11]

CONCLUSION

Sun burns are frequently encountered skin pathology. There is no predominant sex predilection. The occurrence of cases is quite common in age group 20-40 years.

REFERENCES

1. Fitzpatrick TB. The validity and practicality of sun reactive skin types I through VI. Arch Dermatol 1988; 124(6):869.
2. Wright MW, Wright ST, Wagner RF. Mechanisms of sunscreen failure. J Am Acad Dermatol 2001; 44(5):781–4.
3. Bimczok R, Gers-Barlag H, Mundt C, Klette E, Bielfeldt S, Rudolph T, et al. Influence of applied quantity of sunscreen products on the sun protection factor – a multicenter study organized by the DGK Task Force Sun Protection. Skin Pharmacol Physiol 2007; 20(1):57–64.
4. Robinson JK, Rigel DS, Amonette RA. Trends in sun exposure knowledge, attitudes, and behaviors: 1986 to 1996. J Am Acad Dermatol 1997; 37(2 Part 1):179–86.
5. Thieden E, Philipsen PA, Sandby-Moller J, Wulf HC. Sunscreen use related to UVexposure, age, sex, and occupation based on personal dosimeter readings and sun-exposure behavior diaries. Arch Dermatol 2005; 141(8):967–73.
6. Cokkinides VE, Johnston-Davis K, Weinstock M, et al. Sun exposure and sun-protection behaviors and attitudes among U.S. youth, 11 to 18 years of age. Prev Med. 2001; 33(3): 141–151.
7. Autier P, Boniol M, Dore JF. Sunscreen use and increased duration of intentional sun exposure: still a burning issue. Int J Cancer 2007; 121(1):1–5.
8. Brain et al. Prevalence of sunburn and sun-related behaviour in the Danish population: A cross-sectional study. Scandinavian Journal of Public Health, 2010; 1–5.
9. Kiely, AD, Hourihane, J. Sun exposure and sun protection practices of children and their parents. Ir Med J 2009;102:139–43.
10. Dobrow MJ, Orchard MC, Golden B, Holowaty E, Paszat L, Brown AD, et al. Response audit of an internet survey of health care providers and administrators: implications for determination of response rates. J Med Internet Res 2008;10(4): 30-31.
11. Miller DR, Geller AC, Wood MC, Lew RA, Koh HK. The Falmouth Safe Skin Project: evaluation of a community program to promote sun protection in youth. Health Educ Behav. 1999; 26(3):369–384.

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