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Cutaneous Manifestations of Obesity in Adolescent Age Group: A Clinical Study

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Abstract: ***Obesity is currently a major epidemic and has lead to a significant increase in the number of obeseadolescents attending dermatology OPD. obesity is implicated in a wide spectrum of dermatologic diseases including acanthosisnigricans, acrochordons, keratosispilaris, hirsutism, striaedistensae, adiposis dolorosa and fat redistribution, lymphedema, chronic venous insufficiency, plantar hyperkeratosis, bacterial infections, skin infections, hidradenitissuppurativa, psoriasis and tophaceous gout.The aim of this study was to determine the various cutaneous manifestations in obese adolescents and analyse the relation with body mass index(BMI). The various cutaneous changes seen in our study included infections, acanthosisnigricans, skin tags, plantar hyperkeratosis, striae, and chronic lymphedema.***

Keywords: Obesity, adolescents, acanthosis, striae

1. Introduction

Obesity is currently a major epidemic and has led to a significant increase in the number of obese adolescents attending dermatology OPD. It is responsible for changes in skin barrier function, sebaceous glands and sebum production, sweat glands, lymphatics, collagen structure and function, wound healing, microcirculation and macrocirculation, and subcutaneous fat. Moreover, obesity is implicated in a wide spectrum of dermatologic diseases including acanthosisnigricans, acrochordons, keratosispilaris, hirsutism, striaedistensae, adiposis dolorosa and fat redistribution, lymphedema, chronic venous insufficiency, plantar hyperkeratosis, bacterial infections, skin infections, hidradenitissuppurativa, psoriasis and tophaceous gout.

2. Materials and Methods

The aim of this study was to determine the various cutaneous manifestations in obese adolescents and analyse the relation with body mass index (BMI).All patients aged between 10 and 19 years visiting the dermatology outpatient department, JJM Medical College and Hospital, Davangere between July 2015 and June 2016 were screened. The patients with BMI > 30 kg/m^2 were included in the study while age and sex matched controls were included in the control group. After taking consent, demographic details, height, weight and cutaneous examination, findings were recorded. Relevant investigations if required were carried out.

3. Results

A total of 75 cases were studied, of which 48 (64%) were female and 27(36%) were male. Forty two patients had a family history of obesity. Most of the patients belonged to age group between 17 – 19 years (84%) followed by 11 – 13 years (12%) and 14 – 16 years (4%). Majority of the patients (68%) had Class I obesity (BMI of 30.00-34.99) while 24% had Class II obesity (BMI of 35.00-39.99), and 8% had Class III obesity (BMI of ≥ 40.00).(Table 1)The various cutaneous changes seen in our study included infections, acanthosisnigricans, skin tags, plantar hyperkeratosis, striae, and chronic lymphedema. The most common skin condition was acanthosisnigricans(69.33%), followed by skin tags (50.66%), bacterial infections (38.66%) fungal infection (25.33%),intertrigo (14.66%) andstriae (9.33%). Hirsutism was seen in only two female patients.

4. Discussion

Obesity is associated with a number of mucocutaneous manifestations.

Some of these manifestations show statistically significant relationship with increasing BMI. In our study, Acanthosisnigricans (AN) was observed in 63% of patients. Hud et al.

Found that 74% of obese population shows AN along with elevated plasma insulin levels. Obese children with AN also have insulin resistance. In our study, we did not find a significant association of AN with diabetes mellitus with obesity, possibly because of a smaller sample size.

The other common dermatoses seen in our study was skin tags, bacterial infections and fungal infections.In a comparative study performed by Boza *et al*., Boza JC, Trindade EN, Peruzzo J, Sachett L, Rech L, Cestari TF. Skin manifestations of obesity: Acomparative study. J EurAcadDermatolVenereol 2012;26:1220-3.

dermatoses that showed a statistically significant relationship with obesity, compared with the control group, were: Striae ($P < 0.001$), plantar hyperkeratosis ($P < 0.001$), acrochordons ($P = 0.007$), intertrigo ($P < 0.001$), pseudoacanthosisnigricans ($P < 0.001$), keratosispilaris ($P =$

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0.006), lymphedema ($P = 0.002$), and bacterial infections ($P = 0.05$). The presence of striae, pseudoacanthosisnigricans, and bacterial infections were also found to correlate with the degree of obesity.

In another study among obese school children conducted in Saudi Arabia, the skin conditions that were statistically significantly associated with obesity included dandruff, acne, xerosis, acanthosisnigricans, folliculitis, alopecia, striae, and callosities.

Obesity is one of the major public health problems. It, directly or indirectly, starts unfavorable processes in almost all organ systems. Therefore, only a multidisciplinary care may secure treatment and rehabilitation of obese patients. Control of the dermatological complications of obesity play an important role in diminishing the morbidity of obesity.

References

[1] Ahsan U, Jamil A, Rashid S. Cutaneous manifestations in obesity. Journal of Pakistan Association of Dermatologists. 2014;24(1):21-24
[2] Hud JA Jr, Cohen JB, Wagner JM, Cruz PD Jr. Prevalence and significance of acanthosisnigricans in adult obese population. Arch Dermatol.1992;12:941-4.
[3] Ahsan U, Jamil A, Rashid S. Cutaneous manifestations in obesity. Journal of Pakistan Association of Dermatologists. 2014;24(1):21-24
[4] Al-Saeed WY, Al-Dawood KM, Bukhari IA, Bahnassy A. Dermatoses in obese female schoolchildren in the Al-Khobar area, Eastern Saudi Arabia. J Family Community Med 2006;13:65-9.
[5] Ahsan U, Jamil A, Rashid S. Cutaneous manifestations in obesity. Journal of Pakistan Association of Dermatologists. 2014;24(1):21-24

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