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Prevalence Of Scaly Scalp In Prebeupertal Children In Baquba Province

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بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

{ هُوَ الَّذِي جَعَلَ الشَّمْسَ ضِيَاءً وَالْقَمَرَ نُورًا وَقَدَرَهُ مَنَازِلَ لِتَعْلَمُوا عَدَدَ السِّنِينَ

وَالْحِسَابَ مَا خَلَقَ اللَّهُ ذَلِكَ إِلَّا بِإِحْقَاقٍ يُفَصِّلُ الْآيَاتِ لِقَوْمٍ يَعْلَمُونَ }

سورة يونس - الآية 5.

Abstract

Background: Scalp scaling is a common finding in infants and children that may be associated with variety of disorder, seborrheic dermatitis usually occurs between the first 2 to 6 weeks of life, but it occasionally presents as late as 5 months and often recurs during or after puberty. Traditional teaching in both pediatrics and dermatology has been that seborrheic dermatitis rarely occurs in the period between infancy and puberty, Scalp scaling is noted frequently in tinea capitis as well as psoriasis, occasionally scalp scaling can be seen in patients with scabies, dermatomyositis, and Langerhans cell histiocytosis, less common etiologies for scalp scaling include pityriasis rubra pilaris, pemphigus foliaceus, and leukemia cutis.

Aim: This study was aiming to evaluate prevalence of scaly scalp in pre-pubertal children in Baqubah province.

Subject and methods: The sample size was (200) of children, study is cross section study type was carried out in Diyala from 20th of November 2022 to the 22th of March 2023. The study design was by simple random sampling from children.

Results: The total sample of this study was (200), male was 82 and female 118, the most age group was from (5-10) years old, the distributions of scalp scaling in male that founded in percentage (41%), and female (59%), the most age group in children with scalp scaling was (5-10) years old in percentage (48.5%), then < 5 years old (42.5%) years old, and > 10 years old in percentage (9%), the most age group with psoriasis, Alopecia areata and seborreic dermatitis was age group (5-10) years old in percentage (53.7%), (53.3%) and (45%), the psoriasis is the most lesions in children (40%) then tinea capitis then seborreic dermatitis and Alopecia areata in percentage (25%), (20%) and (15%) respectively, the children in rural (57%) more than urban (43%) in scalp scaling lesions.

Conclusions: Scalp scaling conditions more in female than male. The most age group in children with scalp scaling was (5-10) years old. the most age group with psoriasis, Alopecia areata and seborreic dermatitis was age group (5-10) years old. The psoriasis is the most lesions in children then tinea capitis. The children in rural more than urban in scalp scaling lesions.



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We want to thank all the people who accept to provide us with information about our subject.



Dedication

This project is especially dedicated to the teachers who helped and guided us to successfully complete this project work.

Also I would like to dedicate this project to my dear father, who has been a wonderful supporter until my research was completed, and to my beloved mother, who has been encouraging me for months.

Saad Hussein..



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Introductions

Hair diseases are a major health problem affecting a high proportion of the population [1]. Skin and hair diseases can place a heavy emotional and psychological burden on patients that may be far worse than the physical impact [2]. Increased consciousness especially among the youth of their body and beauty further aggravates their anxiety, even though dermatology is characterized by an enormous range of disease/reaction patterns, prevalence surveys suggest that the bulk of skin diseases belong to fewer than ten categories, Such observations are useful in developing educational and preventive health programs for the benefit of people [3].

Scalp scaling is a common finding in infants and children that may be associated with variety of disorder, seborrheic dermatitis usually occurs between the first 2 to 6 weeks of life, but it occasionally presents as late as 5 months and often recurs during or after puberty. Traditional teaching in both pediatrics and dermatology has been that seborrheic dermatitis rarely occurs in the period between infancy and puberty [4].

It has been reported that approximately half of all children with atopic dermatitis may manifest scaling of the scalp, as found in studies of infants 0 to 6 months old¹ and in children from birth to 12 years, despite this, most texts do not list scalp scaling as a manifestation of atopic dermatitis, and many physicians are unaware of this finding [5].

Scalp scaling is noted frequently in tinea capitis as well as psoriasis, occasionally scalp scaling can be seen in patients with scabies, dermatomyositis, and Langerhans cell histiocytosis, less common etiologies for scalp scaling include pityriasis rubra pilaris, pemphigus foliaceus, and leukemia cutis [6].

A recent study of children 7 months to 11 years old, 98% of whom were black and had at least 1 sign or symptom related to the scalp, found the presence of scalp scaling plus head and neck adenopathy to be 97% predictive of tinea capitis, whereas alopecia plus adenopathy was found to be 100% predictive [7].

Few studies have documented the prevalence and etiologies of scalp scaling in children. Allen and Honig [8] evaluated scalp-scaling disorders in children in 1983, noting clinical signs and response to various treatments. No subsequent large-scale studies of childhood scalp scaling have been done.

This study sought to identify the prevalence of scalp scaling and its associated symptoms, signs, and etiologies in both the infantile and early school-age population. We also sought to determine if the presence of head and/or neck lymphadenopathy in those patients with scalp scaling was specific for the diagnosis of tinea capitis [9].

Figure 1: Infantile-type greasy-scalp scale.



Figure 2: Nonspecific fine, white scale.



Hair and scalp disorders in infants and children are a common occurrence and may constitute a complex clinical problem, and they are also a source of anxiety and concern for patients and families [10].

Hair disorders in children can be congenital or acquired and may be associated or not with defects in hair structure. In some cases, they may be a part of serious hereditary syndromes [11].

Common causes of hair disorders in children include folliculitis and furunculosis, pediculosis, alopecia areata, and tinea capitis (TC), in addition to the above-mentioned causes, other less common causes include pityriasis capitis, telogen effluvium, folliculitis decalvans, premature graying of hair, piebaldism, trichotillomania, and congenital atrichia, no extensive report exists regarding the epidemiology of these disorders in children [12].

Hair loss is not an uncommon problem in the pediatric group but has patterns that are different from those seen in adults. In addition, this problem is of particular concern in the pediatric group, as it is associated with more significant psychological consequences in this growing age group [13].

Common causes of hair loss in children include telogen effluvium, tinea capitis, bacterial infections, traction alopecia, trichotillomania, alopecia areata. In addition to the previous, other less common causes of hair loss can be seen including thyroid disorders, illnesses, such as systemic lupus erythematosus, diabetes mellitus, or iron deficiency anemia, malnutrition, structural abnormalities of the hair shaft that usually results in easy breakage and dry brittle hair, scalp infection by various etiological agents staphylococcus aureus and streptococcus pyogenes are the most common [14].

Tinea capitis

is a fungal infection of the scalp that most often presents with pruritic, scaling areas of hair loss, Several synonyms are used, including ringworm of the scalp and tinea tonsurans, Tinea capitis is a dermatophyte infection, Dermatophytes are filamentous fungi in the genera Trichophyton, Microsporum, and Epidermophyton that infect keratinized tissue of skin, hair, or nails, transmission through Person-to-person, animal-to-person, via fomites, Spores are present on asymptomatic carriers, animals, or inanimate objects [15].

Clinical presentation Non- inflammatory infection, Partial alopecia, often circular in shape, showing numerous broken-off hairs, dull gray from their coating of arthrospores, Fine scaling with fairly sharp margin, Infammatory response minimal, but massive scaling, Black dot Broken off hairs near the scalp give appearance of “dots”, Tends to be diffuse and poorly circumscribed [16].

Examination of the affected area with a Wood's light can help identify tinea capitis in patients with some ectothrix infections and favus, Ectothrix infections secondary to *M. canis* often exhibit green- yellow fluorescence, *T. tonsurans* does not fluoresce. Wood’s light, diagnosis by skin scales contain hyphae and arthrospores, Ectothrix: arthrospores can be seen surrounding the hair shaft [17].

Treatment Adjunctive interventions: Antifungal shampoo : Selenium sulfide 5-10 ml on wet scalp, 2 applications each week for 2 weeks will provide control, the prognosis of tinea capitis is excellent, with complete clearance occurring in most patients after a course of treatment, Complete hair regrowth occurs in most children with hair loss, Patients with chronic or severe infections (eg, kerion, favus) have the greatest risk for permanent scarring alopecia [18].

Seborrheic Dermatitis

A very common chronic dermatosis characterized by redness and scaling and occurring in regions where the sebaceous glands are most active, such as the face and scalp, the presternal area, and in the body folds. [19].

Epidemiology and etiology Age of Onset: Infancy (within the first months) puberty, most between 20 and 50 years or older and more common in males [20].

Clinical Manifestation Duration : Gradual onset. Seasonal Variations :Some patients are worse in winter. Skin Symptoms: Pruritus is variable, often increased by perspiration, Skin Lesions Orange-red or gray-white skin , often with “greasy” or white dry scaling macules. papules of varying size. Patches. Sticky crusts and fissures are common behind the external ear. Scaling On the scalp (“dandruff”), seborrheic dermatitis of face: adult-type Erythema and yellow-orange scaling annular of the forehead, cheeks, nasolabial folds, and chin[19].

Distribution of Lesions,Head : Scalp, eyebrows, eyelashes , beard cradle cap: erythema and yellow-orange scales and crusts on the scalp in infants, Face: The flush areas, on forehead ,eyebrows, Trunk : yellowish-brown patches over the sternum, Body Folds : Axillae, groins, anogenital area, submammary areas, umbilicus, in infants presents as a diffuse, exudative, sharply marginated, erythematous ,erosions and fissures Common [21].

Management, Topical Therapy: ketoconazole shampoo, Glucocorticoid cream and lotions. Systemic Therapy : retinoic acid orally 1mg/kg. itraconazole 100mg twice daily for 2 weeks is also effective [22].

Psoriasis

The word psoriasis is derive from greek word ‘psora’ means ‘itching’, Psoriasis is a chronic non-infectious, inflammatory disease of the skin in which epidermal cells are produced at a rate that is about six to nine times faster than normal, The cells in the basal layer of the skin divide too quickly, and the newly formed cells move so rapidly to the skin surface that they become evident as profuse scales or plaques of epidermal tissue[23].

Etiology [24]:

- ❖ Idiopathic cause Some of the factors that may trigger psoriasis are:
 - ✚ Genetic
 - ✚ Autoimmune reaction
 - ✚ Infection
 - ✚ Injury to skin
 - ✚ Changes in climate
- ❖ Medications: Lithium, Antimalarial Medications, Propranolol , Indomethacin
- ❖ Stress
- ❖ Obesity
- ❖ Smoking

The lesions are most abundant over the scalp, the extensor surface of the elbows and knees, the lower part of the back, and the genitalia. Bilateral symmetry is a feature of psoriasis, In approximately one fourth to one half of patients, the nails are involved, with pitting, discoloration, crumbling beneath the free edges, and separation of the nail plate. When psoriasis occurs on the palms and soles, it can cause pustular lesions called palmar pustular psoriasis [25].

Diagnostic Investigations - Collect history - Physical examinations - Skin biopsy : under local anesthesia - Blood and radiography test was done to rule out psoriatic arthritis (ESR, C- Reactive protein) [26].

The goals of management are:

- To slow the rapid turnover of epidermis
- To promote resolution of the psoriatic lesions
- To control the natural cycles of the disease.

First, avoid any precipitating or aggravating factors , An assessment is made of lifestyle, because psoriasis is significantly affected by stress, the standard treatment modalities includes:

- Topical therapy
- Intralesional therapy
- Systemic therapy

- photochemotherapy

Topical therapy The most important principle of psoriasis treatment is gentle removal of scales. This can be accomplished with baths, Oils (eg, olive oil, mineral oil) or coal tar preparations (eg, Balnetar) can be added to the bath water and a soft brush used to scrub the psoriatic plaques gently, After bathing, the application of emollient creams containing alphahydroxy acids (eg, Lac-Hydrin, Penederm) or salicylic acid will continue to soften thick scales [27].

Coal tar preparations are photosensitizing agents so patient should be warned not to expose treated skin to the sun, Apply tar shampoo and steroid lotion daily for scalp lesions. Occlusive dressings: Use plastic wrap or bags as the occlusive dressing, and use rubber gloves on the client's hands, plastic bag on the feet, and a shower cap on the head if affected [28].

Systemic therapy : Methotrexate have been used in treating extensive psoriasis that fails to respond to other forms of therapy. [27].

Oral retinoids (synthetic derivatives of Vitamin A and its metabolite, Vitamin A acid) , Hydroxyurea (Hydrea). Monitor signs and symptoms of bone marrow depression, Cyclosporine A [27].

Photochemo therapy: A treatment for severely debilitating psoriasis is Psoralen and Ultraviolet A (PUVA) Therapy, which involves taking a photosensitizing drug (usually 8-methoxypsoralen) in a standard dose with subsequent exposure to long-wave ultraviolet light when peak drug plasma levels are obtained. UVB light is also used to treat generalized plaque [27].

This study was aiming to evaluate prevalence of scaly scalp in pre-pubertal children in Baqubah province.

Methodology

Ethical and Approval Consideration: Permission was taken from mothers of children to fill the information required and they were assured regarding the confidentiality of their responses. The Reason of the study was explained and only those who agreed to participate are included in the study.

Study Population: The study was performed among children in Dermatology consultant at Baqubah General Hospital.

Study design: The current study is cross section study type was carried out in Diyala from 20th of November 2022 to the 22th of March 2023. The samples study design was by simple random sampling.

Sample technique and data collection: Trained very well to interview the questionnaire carefully and in scientific way. Respondents were assured that the information obtained would be confidential and used only for statistical purposes.

Questionnaire and Interview: the questionnaire used for data collection was designated in (English) language.

Data Analysis and Presentation: All data management and analysis was done by using manual statistical methods. Data have been represented by suitable tables and figures.

The sample: The sample was 200 from children in Diyala city

Results

The total sample of this study was (200), male was 82 and female 118, the most age group was from (5-10) years old.

Table 1: the distribution of scalp scaling according to the gender.

	Number	%
Male	82	(41%)
Female	118	(59%)

This table shows the distributions of scalp scaling in male that founded in percentage (41%), and female (59%).

Table 2: the distribution of scalp scaling according to the age.

	Number	%
<5 years	85	(42.5%)
5-10 years	97	(48.5%)
>10 years	18	(9%)

This table shows that the most age group in children with scalp scaling was (5-10) years old in percentage (48.5%), then < 5 years old (42.5%) years old, and > 10 years old in percentage (9%).

Table 3: Comparison between different lesions regarding age group.

scalp disease	<5 years N= 85	5-10 years N= 97	>10 years N= 18	Total
Psoriasis	31 (38.75%)	43 (53.75%)	6 (7.5%)	80
Tinea capitis	25 (50%)	20 (40%)	5 (10%)	50
Alopecia areata	12 (40%)	16 (53.3%)	2 (6.7%)	30
Seborrheic dermatitis	17 (42.5%)	18 (45%)	5 (12.5%)	40

This table shows the different lesions regarding age group that shows the most age group with psoriasis, Alopecia areata and seborreic dermatitis was age group (5-10) years old in percentage (53.7%), (53.3%) and (45%) while most age group with Tinea capitis was < 5 years old in percentage (50%).

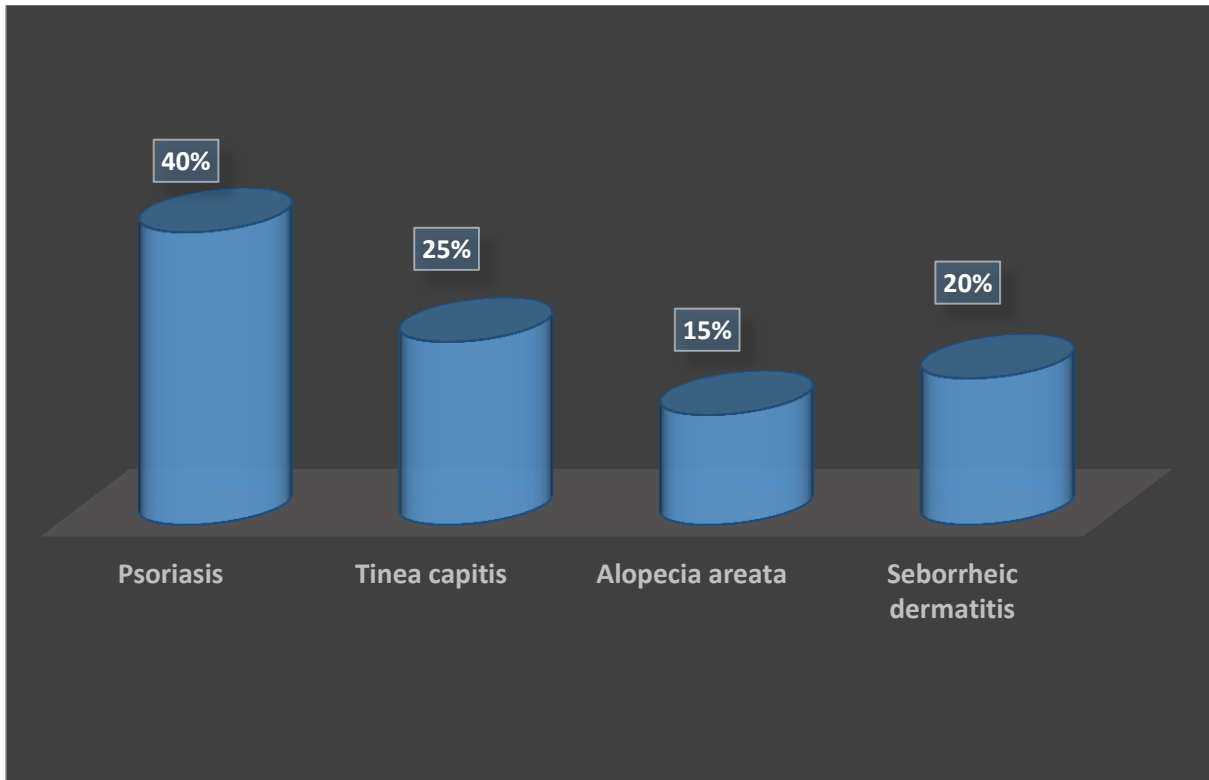


Figure 1: the frequency of scalp scaling different lesions in children.

This figure shows that the psoriasis is the most lesions in children (40%) then tinea capitis then seborrheic dermatitis and Alopecia areata in percentage (25%), (20%) and (15%) respectively.

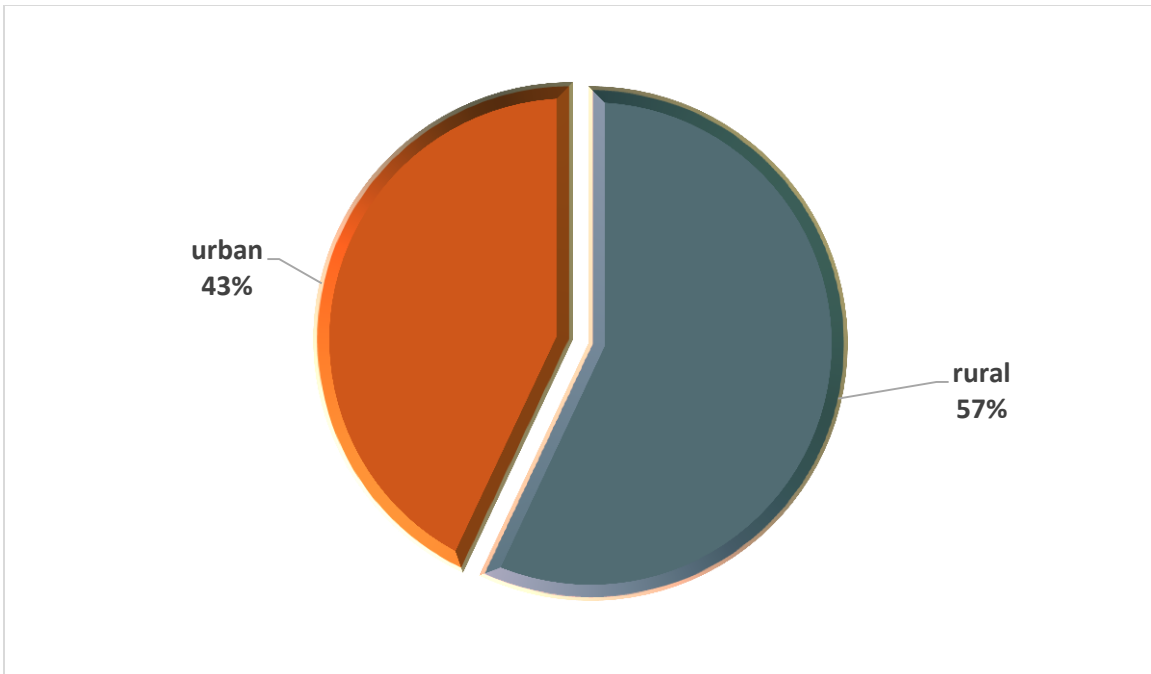


Figure 2: the frequency of different lesions according to residence.

This figure shows that the children in rural (57%) more than urban (43%) in scalp scaling lesions.

Discussions

In this study the total sample was (200), the distributions of scalp scaling in male that founded in percentage (41%), and female (59%).

Also in study was conducted in Al-Azhar University (Assiut), Assiut, Egypt [28], show the female (56%) more than male (44%) with lesions of scalp scaling.

While in study was conducted in San Diego [29], shows approximately no variation between male and female that the percentage of male (51%) and female (49%) children with scalp scaling lesions.

According to this study the most age group in children with scalp scaling was (5-10) years old in percentage (48.5%), then < 5 years old (42.5%) years old, and > 10 years old in percentage (9%).

Approximately same percentage in study of Al-Azhar University (Assiut), Assiut, Egypt [28], and San Diego [29], that percentage of age group (5-10) years old was (51%) and (50%) respectively.

In this study, the most age group with psoriasis, Alopecia areata and seborreic dermatitis was age group (5-10) years old in percentage (53.7%), (53.3%) and (45%) while most age group with Tinea capitis was < 5 years old in percentage (50%).

In study was conducted, in Medical University of Graz, Graz, Austria [30], approximately same percentage that the most age group with psoriasis, Alopecia areata and seborreic dermatitis was age group (5-10) years old in percentage (52%), (50%) and (49%) while most age group with Tinea capitis was < 5 years old in percentage (55%).

the psoriasis is the most lesions in children (40%) then tinea capitis then seborreic dermatitis and Alopecia areata in percentage (25%), (20%) and (15%) respectively.

While in study of Assiut, Egypt [28], the tinea capitis is the most scalp scaling in children in percentage (38%) then psoriasis (33%).

The difference in percentage with this study may be due to the most common in hot, humid areas such as Central America, Southeast Asia and Africa.

In this study, the child in rural (57%) more than urban (43%) with scalp scaling lesions, also this approximately same in studies of Medical University of Graz, Graz, Austria [30] and San Diego [29], the percentage of rural was (61%) and (63%) respectively.

Conclusions

- 1- Scalp scaling conditions more in female than male.
- 2- The most age group in children with scalp scaling was (5-10) years old.
- 3- the most age group with psoriasis, Alopecia areata and seborreic dermatitis was age group (5-10) years old.
- 4- The psoriasis is the most lesions in children then tinea capitis.
- 5- The children in rural more than urban in scalp scaling lesions.

Recommendations

- 1- Additional studies are needed to define the causes of nonspecific scalp scaling in children, particularly in the ages between infancy and puberty.
- 2- Early management is needed, as it affects the normal physical and mental growth of children.
- 3- Community-based studies need to be carried out to confirm and explore our findings to determine the magnitude and pattern of different types of dermatoses affecting that age group, which could be a basis for future health plans.
- 4- The routine use of dermoscopy in the clinical evaluation of scalp and hair disorders will improve the diagnostic capability beyond simple clinical inspection by revealing novel features of disease leading to better management.
- 5- Health promotion and health education interventions are recommended to promote good hygiene, better living conditions, early identification, and treatment.

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