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Infantile acne is a medical problem that calls for therapy

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ABSTRACT

Background: Acne vulgaris of infants is a well-recognized medical and cosmetic problem as it may cause severe scarring of the face. Hence medical treatment is essentially needed. **Objective:** To record all patients with infantile acne vulgaris and to do full demographic and clinical evaluation.**Patients and methods:**This is case series clinical descriptive study with interventional therapeutic trial that included all patients with infantile acne vulgaris that were seen during the period from Jan 2021 – September 2021 years. All demographic and clinical features were recorded. The clinical scoring of acne severity was done as follow:mild when the rash was mainly comedones,moderate mainly papules and pustules and severe mainly nodules and scarring. Any triggering factors were recorded including hormonal changes. Therapy was started by giving topical 2% clindamycin twice a day and oral trimethoprim-sulfamethoxazole suspension one teaspoonful twice a day for 1-2 months. **Results:** This study included 28 patients with infantile acne, with 19(67.86%) males and 9(32.14%) females with male to female ratio;2.1. The age of patients ranged from 1-24 months, with a mean 14.6 ±6.1.The duration of rash was ranged from 4-8 weeks. The commonest sites affected were cheeks in 27(96.4%) cases, followed by forehead in 8 (28.6%), then chin in 6 (23.1%), and nose 6 (23.1%) of the cases. Scoring of severity of acne showed moderate in 13(46.4%), followed by mild in 9 (32.1%), and sever in 6 (21.4%). The response to treatment was complete clearance in 15(53.6%) and partial response in 13(46.4%) of the patients while no adverse effects were observed.**Conclusions:** Infantile acne is not uncommon disease among infants where medical therapy is essentially needed especially in severe cases as to prevent facial scarring. Early diagnosis and treatment with oral trimethoprim-sulfamethoxazole suspension and topical 2% clindamycin lotion is an effective mode of therapy.

Keywords: Infantile acne, therapeutic trial ,clindamycin ,trimethoprim-sulfamethoxazole

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Introduction:

The historic term, “infantile acne” has been used to describe true comedonal and inflammatory acne vulgaris that generally begins after the neonatal period, usually between 4 months and 5 years of age. A more accurate term for this condition is “early-onset acne vulgaris.” Similar to adolescent acne, the severity of this condition can range from mild and comedonal, to severe and nodulocystic, with scarring. [1] The aetiology of infantile acne remains poorly understood. it may be associated with increased levels of androgens produced by adrenal glands in both sexes and by the testes in boys. Dehydroepiandrosterone (DHEA) from the adrenal glands stimulates sebum production for up to a year of age or until the DHEA levels drop at about 6–12 months. [2] A child with infantile acne had elevated luteinizing hormone, follicle-stimulating hormone, & testosterone levels. [3] Therefore, hyperandrogenism should be considered as an etiology. Other causes also have been suggested. Rarely, an adrenocortical tumor may be associated with persistent infantile acne with signs of virilization and rapid development. Malassezia was implicated in infantile acne in a 6-month-old infant who was successfully treated with ketoconazole cream 2%. [4]

Infantile acne vulgaris generally affect the face, predominantly the cheeks, and sometimes the chin and forehead and have a male predominance .It is usually mild to moderate in severity. Usually starts at 3-6 months of age. [5] Lesions are more pleomorphic and inflammatory than in neonatal acne. In addition to closed and open comedones, infantile acne may be first evident with papules, pustules, severe nodules, and cysts with scarring potential. Accordingly, treatment may be required. Most cases of infantile acne resolve by 4 or 5 years of age, but some remain active into puberty. [6]

Infantile acne often is misdiagnosed because it is rarely considered in the differential diagnosis. When closed comedones predominate, acne venenata induced by topical creams, lotions, or oils may be etiological factor. Chloracne also should be considered.[7] The treatment strategy for infantile acne is similar to treatment of acne at any age, with topical agents including retinoids (eg, tretinoin, benzoyl peroxide) and topical antibacterials (eg, erythromycin). Twice-daily erythromycin 125-250 mg is the treatment of choice when oral antibiotics are indicated. Tetracyclines are contraindicated in treatment of neonatal and infantile acne. Intralesional injections with low-concentration triamcinolone acetonide, cryotherapy, or topical corticosteroids for a short period of time can be used to treat deep nodules and cysts.[8] Acne that is refractory to treatment with oral antibiotics alone or combined with topical treatments poses a dilemma, given the potential cosmetic sequelae of scarring and quality-of-life concerns. Because reducing or eliminating dairy intake appears beneficial for adolescents with moderate to severe acne, this approach may represent a good option for infantile acne. [9] The aim of the present study is the to record all patients with infantile acne vulgaris and to do full demographic and clinical evaluation with therapeutic trial.

Patients and methods

This a case series clinical descriptive study with therapeutic trial that was carried out during the period from 1st January to 1st September 2021.Full history,demographic features and clinical evaluation were carried out . Informed consent was obtained from each patients’ parents after explanation of the nature of the study. Close-up photographs were taken at the same place with constant distance and illumination. The clinical scoring of acne severity was done as follow: mild when the rash was mainly comedones,moderate mainly papules and pustules and severe mainly nodules and scarring. Any triggering factors that aggravate the rash were recorded including hormonal changes. Therapy was started by giving topical 2% clindamycin twice a day and oral trimethoprim-sulfamethoxazole suspension one teaspoonful twice a day for 1-2 months.

Statistical Analysis

Statistical package for social science(SPSS) version 22 was used for data input and analysis. Data were statistically described in terms of frequencies (no.of cases) mean, standard deviation (SD), male to female ratio and percentage (%).

Results

The analyses of 28 patients with acne vulgaris showed the following. The age of patients ranged from 1-24 months, with a mean ± SD (14.6 ±6.1).The age distribution was as follows: commonest age group was 13-19 months in 12 (42.9%) infants , followed by 20-26 month in 5 (17.9%), 6-12 month in 9 (32.1%), and the lowest was less than 6 months in 2 (7.1%) cases. While the age of onset was 11(39.3%) at 6-12 months, followed by <6 months in 9(32.1%) cases, then 4(14.3%) at age 13-19 months, while at age 20-26 months was 4(14.3%). The commonest gender among patients was male gender 19(67.86%), while female gender was 9(32.14%), male to female ratio was 2:1. One site presentation was found among 12(42.9%), two sites presentation in 12(42.9%), then three sites in 3(10.6%), while four sites was reported among 1(3.6%) of the patients.

The commonest sites affected were cheeks 27(96.4%), followed by forehead 8(28.6%), then chin among 6(23.1%), and nose 6(23.1%), while forehead in 3(11.5%) cases,while the trunk was not affected in any infant. The frequency of severity of acne was moderate in 13(46.4%), followed by mild 9(32.1%), and sever in 6 (21.4%) cases.

Type of lesions commonly were mainly papulopustular with or without comedones in 11(39.3%) (Figure 1), followed by mainly comedones with or without papules in 10(35.7%)(Figure 2) , mainly nodular in 4(14.3%)(Figure3), and scaring with no active lesion in 3(10.7%) patients(Figure4). Positive family history was seen in 2(7.1%) of cases.

The results of therapeutic trial had shown that complete clearance in 15(53.6%) patients and partial improvement in 13(46.4%) cases while scarring was not affected by therapy. No adverse effects were noticed in any patient.

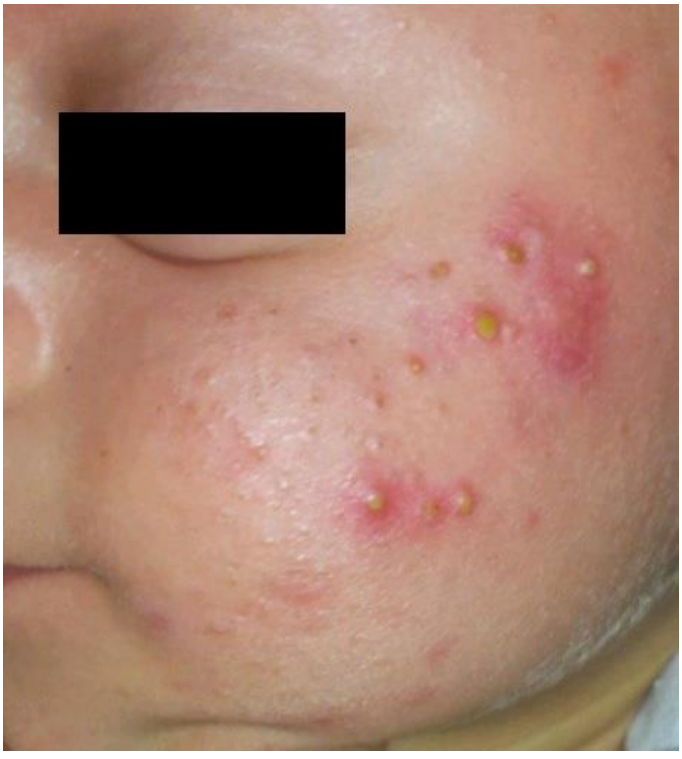

Figure (1): Twelve-month age infant showing open and closed comedones with pustules.

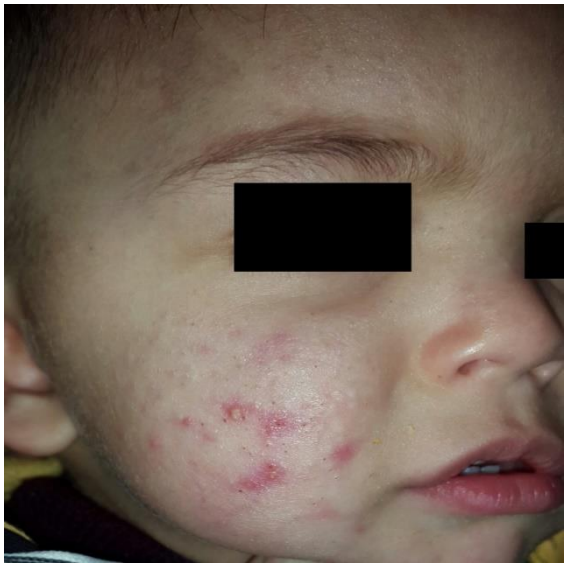

Figure (2): Fifteen-month age infant showing closed comedones and papulopustular rash.

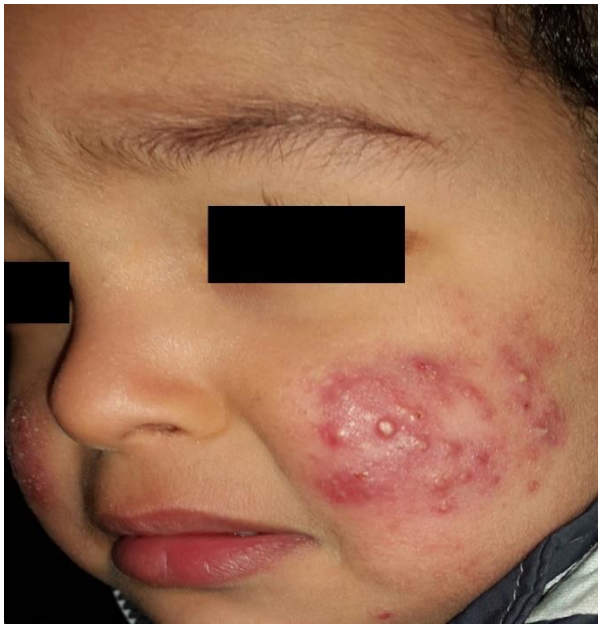

Figure (3): Sixteen-month age infant showing nodular infantile acne.

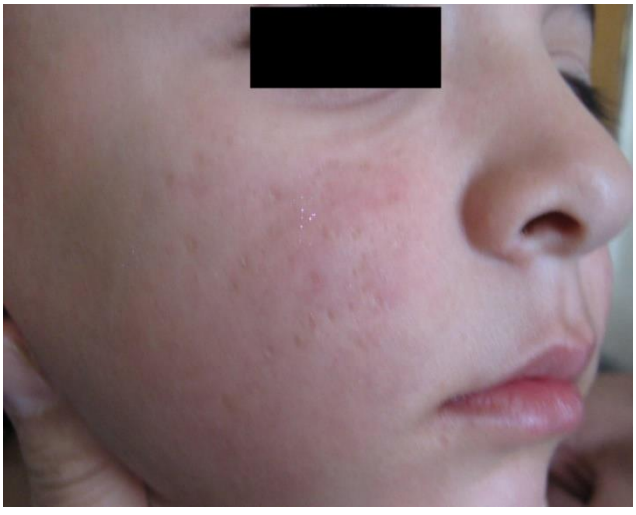

Figure (4): Twenty-month age infant showing scarring acne.

Discussion

In the current study, the commonest age group was 13-19 months 12 (42.9%), followed by 20-26 months 5 (17.9%), 6-12 months 9 (32.1%), and the lowest was < 6 months 2 (7.1%). This is different from a study done by Doulat Rai Bajaj et al. in Pakistan in 2013, and found that 75% of affected cases were 2-6 months of age. [11] The current study revealed male predominance in 67.86%, in comparison to female was 32.14% and this is consistent with the previous, limited literature, as it is found predominantly among boys .[12] Similar results revealed by Doulat Rai Bajaj who stated that 75% were boys and remaining 25% girls. [11] Also the predominance of the male gender that agrees with other researches. [13, 14] The reason for this increased vulnerability of male boys to acne as having additional source of androgens from testes other than the adrenal glands. [11] The sites of acne could one site or more and the current study showed two sites were affected in 42.9% of cases and this was similarly reported by Marta Filo-Rogulska et al. [15] The present study revealed that the commonest site affected was cheeks 96.4%, followed by forehead 28.6%, then chin among 23.1%, and nose 23.1%, while frontal was in 11.5% of the cases. This is similar to Doulat Rai Bajaj who found that all patients had acne on face and that the cheeks are affected alone in 50% of cases, while forehead in 25%, chin in 16.66%, and chin and forehead in 8.33%. [11]

In our study, acne rash was limited to face only and this finding was similar to another research. [16] This finding was different from another reported study by Cunlifee et al. [17] This may be explained by the less severity of disease in present work.In addition, Dorotea Šijak et al. also reported lesions on the trunk in 1.8% of cases while in older age groups the trunk and face (two sites) lesions were observed in 51.6%. of patients [18]. Cheeks were the dominant site involved followed by chin and forehead in the present work and this was similarly noticed by other investigators [19]. Alakloby et al. in 2008 found that 30.8% of patients had comedones only; 15.3% had papules and pustules, and 53.4% had a combination of papules, pustules, and cysts. Omar M Alakloby et al. in 2008 , found that the sites of involvement were the forehead, cheeks, and chin; two of these were affected in 34.6% of neonates while 50% of patients had more than two areas affected and 15.3% had only a single area affected. [20] The current study revealed that most of cases had moderate type (46.4%), followed by mild (32.1%), and sever (21.4%). This disagree with Doulat Rai Bajaj found that the cases were commonly mild in 58% and moderate in 41% of cases and none of the patients in this study had severe acne.[11]

The current study found that severe cases found in 21% of patients which is more than the results found by Cunliffe et al. who found that severe cases formed 14% of patients with infantile acne. [17] The current study revealed that the type of lesion commonly were mainly papulopustular with or without comedones (39.3%), followed by mainly comedones with or without papules (35.7%) , mainly nodular (14.3%), and scaring with no active lesion (10.7%). Doulat Rai Bajaj found that the (41.6%) patients had papules and pustules as the dominant lesions, (25%) comedones only, (25%) a combination of comedones, papules and pustules, and (8.4%) had cystic lesions in addition to papules. [11] Iben Marie Miller et al. in 2012 found that a predilection for the cheeks, and a polymorphic inflammatory morphology. [12] Alakloby OM et al. in a study in 2008 found that the cases came with various class of lesions ranged from comedones to pustules. However; inflammatory papules with few pustules being the dominant clinical pattern as in the study.[20]

The present study had shown that positive family history found among 7.1% of cases. Doulat Rai Bajaj et al. found that the family history of disease was positive in 50% subjects while Iben Marie Miller et al. found that 33% had family history of acne. [11, 12] There are various elements have been proposed to participate to acne development in neonatal period. These

encompass hormonal, drugs, and genetic factors. The presence of positive family history in several patients favors the genetic theory whereas mother androgens combined with hyperactive adrenal glands in infants result in increase in leutinizing hormone and testosterone at early pubertal levels have been proposed to promote acne [21]. Around 7% of the cases in the present research had positive family history favoring genetic etiological element. However they neither had endocrine disorders nor any evidence of drug exposure [21]. The present study had demonstrated that most of patient was with age of onset at 6-12 months in 39.3%, followed by <6 months in 32.1%, then 13-19 months in 14.3%, and at 20-26 months in14.3% whereas a study found that the mean age of onset of acne was 07 months in which the most of cases were seen between 6 to 9 months. [11, 17]

Šijak D et al. (2019) in Croatia found a non - significant correlation between positive family history and age of onset of pediatric acne [18]. While Iben Marie Miller et al. in 2012 and Alakloby et al. found that the average age of onset was 6.16 months (range 0–21 months).[12, 20] However it is disagree with other researches. [12, 22] None of the patient in the present work exhibited signs of hyperandrogenism, therefore no hormonal investigations were performed. All the patients in the current study were healthy having no clinical characteristics of any endocrine diseases. Several researches have documented the same results. In some of these studies, the hormonal assessment was carried out and shown to be invariably normal. [23] The present work had shown that post treatment clearance of acne was reported in 53.6% of cases while partial improvement was seen in 46.4% of the treated patients. This goes with the reported literature that indicate for moderate to severe inflammatory lesions, especially with the presence of or growing concerns for scarring, need the administration of oral non-tetracycline antibiotics. The first-line should be erythromycin but If the patient has documented colonization of a resistant strain of Propionibacterium acnes, then an acceptable alternative is oral sulfamethoxazole-trimethoprim. Treatment with 2% clindamycin lotion and trimethoprim is safe at this age group, as no adverse reactions were noticed in any infants and this combination of therapy was not reported before.

Conclusions

Infantile Acne is not uncommon disease among infants. Therefore, the early diagnosis and treatment is important especially in severe cases in order to prevent facial scaring. Early treatment with oral trimethoprim-sulfamethoxazole suspension and topical 2% clindamycin lotion is an effective mode of therapy and highly recommended in this age group.

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References

[1]. Serna-Tamayo C, Janniger CK, Micali G, Schwartz RA. Neonatal and infantile acne vulgaris: an update. Cutis. 2014; 94(1):13-6.

[2]. Eichenfield LF, Krakowski AC, Piggot C, et al. Evidence based recommendations for the diagnosis and treatment of paediatric acne. Paediatrics. 2013;131:S163–86.

[3]. Paller AS, Mancini AJ. Paller and Mancini-Hurwitz Clinical Pediatric Dermatology E-Book: A Textbook of Skin Disorders of Childhood and Adolescence,6th ed. Elsevier Health Sciences, 2020 ; 8:180-185.

[4]. Kang SK, Jee MS, Choi JH, et al. A case of infantile acne due to Pityrosporum. Pediatr Dermatol. 2003;20:68-70.

[5]. Mathes E, Howard R, Edwards MS. Vesicular, pustular, and bullous lesions in the newborn and infant. UpToDate. Available. 2018.

[6]. Dessinioti C, Zouboulis CC, Bettoli V, Rigopoulos D. Comparison of guidelines and consensus articles on the management of patients with acne with oral isotretinoin. J Eur Acad Dermatol Venereol. 2020 ;34(10):2229-40.

[7]. Filo-Rogulska M, Wcislo-Dziadecka D, Brzezinska-Wcislo L. Neonatal and infantile acne-etiopathogenesis, clinical presentation and treatment possibilities. Post N Med. 2018;31(1A):45-8.

[8]. Antoniou C, Dessinioti C, Stratigos AJ, et al. Clinical and therapeutic approach to childhood

acne: an update. Pediatr Dermatol. 2015; 26:373-380.

[9]. Lu LY, Lai HY, Pan ZY, Wu ZX, Chen WC, Ju Q. Obese/overweight and the risk of acne vulgaris in Chinese adolescents and young adults. Hong Kong J Dermatol Venereol. 2017 ;25(1):5-12.

[10]. Admani S, Barrio VR. Evaluation and treatment of acne from infancy to preadolescence. Dermatol Ther. 2013 ;26(6):462-6.

[11]. Bajaj DR, Devrajani BR, Shaikh S. Infantile Acne: A Clinical and Therapeutic Study of 12 Patients. World Applied Sciences Journal 2013 ; 20 (10): 1328-31.

[12]. Miller IM, Echeverría B, Torrelo A, Jemec GBE. Infantile Acne Treated with Oral Isotretinoin. Pediatr Dermatol.2013; 30: 513-518.

[13]. Cambazard F. Neonatal,infantile and puberty acne. Ann Dermatol Venereol.2003; 130: 107-12.

[14]. Stevanović DV.Acne in infancy. Australasian Journal of Dermatology.2007; 5(4): 224-9.

[15]. Filo-Rogulska1 M , Wcisło-Dziadecka D , Brzezińska-Wcisło L. Neonatal and infantile acne-ethiopathogenesis, clinical presentation and treatment possibilities. Post N Med 2018; XXXI (1A): 45-8.

[16]. Samycia M, Lam JM. Infantile acne. CMAJ. 2016;188 (17-18):E540.

[17]. Cunliffe WJ, Baron SE, Coulson IH. A clinical and therapeutic study of 29 patients with infantile acne. Br J Dermatol. 2001;145(3):463-6.

[18]. Šijak D, Horvat I, Sonicki Z, Murat-Sušić S, et al. Correlation between family history and the age of onset of childhood acne in relation to sex and type of acne. Acta dermatovenerologica Croatica. 2019 ;27(2):86-91.

[19]. Jansen T, Burgdorf WH, Plewig G. Pathogenesis and treatment of acne in childhood. Pediatr Dermatol. 1997 ;14(1):17-21.

[20]. Alakloby OM, Bukhari IA, Awary BH, Al-Wunais KM. Acne neonatorum in the eastern Saudi Arabia. Indian Journal of Dermatology, Venereology, and Leprology. 2008 ;74(3):298.

[21]. Serna-Tamayo C, Janniger CK, Micali G, Schwartz RA. Neonatal and infantile acne vulgaris: an update. Cutis. 2014;94(1):13-6.

[22]. Lucky AW. A review of infantile and pediatric acne. Dermatology. 1998;196(1):95-7.

[23]. Dogliotti . Acne Infantum in an Indian Child. oral S Air Med J. 1976; 50: 2106-7.