The Efficacy of 6 Weeks Course of 0.05 % Topical retin-A in the Treatment Molluscum Contagiosum: A Cohort Study

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ABSTRACT

Aim of the study: to evaluate the role of 0.05 % topical retin-A in the treatment of molluscum contagiosum. The present cohort study included 23 patients with molluscum contagiosum. The study was has been carried out at dermatology unit at Al-Diwaniyah teaching hospital, Al-Diwaniyah Province, Iraq during the period from June 2018 through January 2019. Age, gender and number of lesions were the main variables included in the study. All patients were given a topical retin-A cream, 0.05% concentration in a dose of one bed time application per day. There was highly significant reduction in mean number of lesions from 8.65 ± 3.20 to 0.87 ± 1.46 ($P < 0.001$) and the cure rate was 65.2 %. The current study included 23 patients with molluscum contagiosum with a mean age of 13.26 ± 8.60 years and an age range of 3 to 23 years; 16 (69.6 %) children and 7 (30.4 %) adults. The study included 13 (56.5 %) and 10 (43.5 %), male and female patients respectively. The use of topical 0.05% rein-A can be justified in patients with molluscum contagiosum because of high rate of cure and negligible side effects.

Keywords: *topical retin-A, molluscum contagiosum*

Introduction

The well-known molluscum contagiosum is a dermatological disease that is caused by a double-stranded DNA poxvirus [1]. There are four subtypes of this virus, MCV-1, MCV-2, MCV-3 and MCV-4. MCV-1 is mainly seen in children; whereas, MCP-2 is seen in patients with HIV. MCV-3 and MCV-4 are frequently seen in Australia and Asian countries [2]. The virus is transmitted most commonly by direct and indirect contact; other ways of transmission include autoinoculation, sexual transmission and vertical transmission [3]. The typical presentation of this superficial skin disease, also known as water wart, is in the form of dome shaped popular lesion that is purple pinkish, sometimes white in color, 2 to 5 mm in diameter. The number of these lesions is often in the range of 1 to 20; however, a number such as 100 has been reported [3,5]. Very large lesions (more than 1.5 cm), secondary bacterial infection and multiple lesions are often seen in immune compromised patients [6]. Abdomen, inner thighs and genitalia are the usual sites of involvement in adults whereas in children lesions are mainly seen in areas such as face, trunk and limbs [7,8]. The disease is a common clinical problem all over the world particularly in warm humid areas. It has been estimated that about 122 million subjects were suffering the disease in 2010. The principal age groups affected by the disease include children between 2 and 5 years of age and adults who are sexually active. The prevalence rate is even higher in immune compromised patients, particularly HIV patients in whom it may reach up to 18 %. There disease is equally common in males and females [9]. The virus typically infects keratinocytes and the lesion is limited to epidermis. The virus has the ability to interfere with host innate immunity through production of specific viral proteins [10]. Typical histopathological features of skin biopsy include the cup shaped epidermal indentation and Henderson-Paterson bodies [11]. The disease is self limiting; however, infected individuals or their parents seek medical advice for cosmetic reasons, to void transmission of the disease to other members in the family, or because the disease may lasts unusually for long periods [12-14]. Treatment approaches may be in the form of physical

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removal of the lesion, topical application of certain medical preparation and sometimes systemic approach; however, there is no clear consensus about an effective mode of therapy [15,16]. Physical removal may be done by cryotherapy or curettage and topical medications include benzoyl peroxide, salicylic acid, potassium hydroxide and podophyllotoxin [15,16]. Topical retin-A cream has been described by a number of recent literatures [17-19]; nonetheless, the results were controversial. In view of the available data about the lack of effective mode of treatment of molluscum contagiosum and because of sufficient controversy about the use of retin-A topical preparation, the planning and conductance of the current study were justified.

Methodology

The present cohort study included 23 patients with molluscum contagiosum. Those patients were selected from the pool of patients visiting the dermatology consultation unit at Al-Diwaniyah teaching hospital, Al-Diwaniyah Province, Iraq during the period from June 2018 through January 2019. The first patients was selected randomly out of 13 patients seen during the first week of study according to a random number generated by random function of a calculator; the rest of patients were selected as one of every other three. Age, gender and number of lesions were the main variables included in the study. All patients were given a topical retin-A cream, 0.05% concentration in a dose of one bed time application per day. The patients were followed up 6 weeks later with two main outcomes being looked for: the number of lesions and possible side effects. The study was approved by the institutional ethical approval committee and a verbal consent was obtained from each participant or his parents, in case of children, after full illustration of the purpose and the procedure of the current study.Obtained data were then transferred into an SPSS (version 23) spread sheet. Numeric data were expressed as mean, range and standard deviation, whereas, categorical data were expressed as number and percentage. Willcoxon test was used to compare the mean number of lesions before and after treatment. The level of significance was set at $P \leq 0.05$.

Results and Discusion

The current study included 23 patients with molluscum contagiosum with a mean age of 13.26 ± 8.60 years and an age range of 3 to 23 years; 16 (69.6 %) children and 7 (30.4 %) adults, as shown in table 1. The study included 13 (56.5 %) and 10 (43.5 %), male and female patients respectively, table 1. Statistical indexes and number of lesions before and after topical retin –A treatment are shown in table 2. There was highly significant reduction in mean number of lesions from 8.65 ± 3.20 to 0.87 ± 1.46 ($P < 0.001$) and the cure rate was 65.2 %, as shown in table 2. Current study showed that the use of topical 0.05% retin-A for the treatment of skin lesions caused by molluscum contagiosum was effective and resulted in cure of approximately 65 % of patients and reduced the lesions in the rest of patients significantly. On the other hand, daily bed night administration of topical 0.05% retin-A was free of side effects in all patients. In another Iraqi study, the cure rate was 65% after the same period of treatment (6 weeks) [17]; thus our findings agree with the finding of this study. In addition, the previous Iraqi study has reported no significant side effect with the exception of some mild irritation which needed no discontinuation of the treatment [17]. This finding also solidifies our finding that the use of retin-A in treatment of molluscum contagiosum for six weeks is associated with minimal if any side effects. In another comparative study, carried out by Rajouria *et al*, the use of retin-A topically was able to reduce mean number of lesions from 8.35 ± 2.82 to 2.00 ± 1.00 (19); whereas our study showed a reduction in the mean number of lesions from 8.65 ± 3.20 to 0.87 ± 1.46. Indeed, the concentration and the application way used by Rajouria *et al* was the same as that used by the present study; howver, the duration treatment in the current study was longer than that of Rajouria *et al*'s study, 6 weeks versus 4 weeks. In view of the present data obtained from the current study and some previous studies [17-19], the use of topical 0.05% rein-A can be justified in patients with molluscum contagiosum because of high rate of cure and negligible side effects. However, to validate the results of the present study a larger sample multi-centre randomized controlled clinical trial is needed.

Table 1: Demographic characteristics of patients with molluscum contagiosum

Characteristic	Value
Number of cases	23
Age	
Mean ± SD	13.26 ± 8.60
Range	3-23
< 15 years	16 (69.6 %)
≥ 15 years	7 (30.4 %)
Gender	
Male	13 (56.5 %)
Female	10 (43.5 %)

Table 2: Number of lesions before and after 0.05 % topical retin-A treatment

Index	Number of lesion before treatment	Number of lesions after treatment	P †
Mean ± SD	8.65 ± 3.20	0.87 ± 1.46	<0.001 HS
Range (min. – max.)	3 - 15	0 - 5	
Median (IQR)	8 (6)	0 (2)	
Number of patients with no lesions	0 (0 %)	15 (65.2 %)	

Conclusion

All patients were given a topical retin-A cream, 0.05% concentration in a dose of one bed time application per day. There was highly significant reduction in mean number of lesions from 8.65 ± 3.20 to 0.87 ± 1.46 ($P < 0.001$) and the cure rate was 65.2 %. The current study included 23 patients with molluscum contagiosum with a mean age of 13.26 ± 8.60 years and an age range of 3 to 23 years; 16 (69.6 %) children and 7 (30.4 %) adults. The study included 13 (56.5 %) and 10 (43.5 %), male and female patients respectively. The use of topical 0.05% rein-A can be justified in patients with molluscum contagiosum because of high rate of cure and negligible side effects.

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Conflict of Interest: None to declare.

Ethical Clearance: All experimental protocols were approved under the Department of Medicine/College of Medicine/University of AL-Qadisiyah, Iraq and all experiments were carried out in accordance with approved guidelines.

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