



# Journal of Biological Sciences

ISSN 1727-3048

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## Studying the Treatment Effects of Erythromycin in Patients Suffering from Pityriasis Rosea

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**Abstract:** This study aimed at evaluating the efficacy of oral erythromycin in patients with Pityriasis Rosea. Fifty patients were selected which were divided into 2 groups. In group A (test group) the patients were treated by erythromycin while in group B (placebo group) the patients received chlorpheniramin or diphenhydramin. Complete response was observed in 16 patients (64%) in the treatment group (A) and none in the second group (B) ( $p = 0/0001$ ). It is recommended to treat the patients suffering from pityriasis rosea at any time of disease diagnosis using oral erythromycin for a two-week period.

**Key words:** Pityriasis rosea, erythromycin, treatment

### INTRODUCTION

Pityriasis rosea is an acute inflammatory dermatosis with an unknown pathogen (Azimi *et al.*, 2013; Nejad *et al.*, 2013; Goforoushan *et al.*, 2013). The disease constitutes 0.6% of all visits by dermatologists (Cruz *et al.*, 2012; Goldust and Rezaee, 2013; Lotti *et al.*, 2013). It is usually located on body and proximal part of extremities (Goldust *et al.*, 2013a; Mohebbipour *et al.*, 2012; Zawar and Godse, 2011). The lesions are automatically recovered within 1-3 months without any dermal changes (Ayanlowo *et al.*, 2010; Goldust *et al.*, 2013b, c). After being affected, immunity against the disease is usually created during life and recurrence of the disease is observed only in 1.8-3.5% of cases (Goldust *et al.*, 2013d; Krishnamurthy *et al.*, 2010; Vafaei *et al.*, 2012). Exiting the erythrocytes from the vessels and entering the superficial dermis and sometimes epidermis is the most common symptom of the disease (Goertz and Klotzek, 2010; Goldust *et al.*, 2012; Sadighi *et al.*, 2011). Different treatment methods such as dapsone, ketotifen, use of sunlight and ultraviolet ray have been used with different outcomes. But, their disadvantages were more than advantages and none of them have been usefully and permanently used in treating the patients (Golfurushan *et al.*, 2011; Guarneri *et al.*, 2009; Milan *et al.*, 2011). Recent studies refer to advantages of using oral erythromycin for 2 weeks in decreasing the disease symptomatic period (Razi *et al.*, 2013; Salehi *et al.*, 2013b; Yousefi *et al.*, 2013; Zawar and Kumar, 2009). Evaluating effects of erythromycin in treating pityriasis rosea is especially important considering its less complications, reasonable price and

availability (Browning, 2009; Goldust *et al.*, 2011; Sadeghpour *et al.*, 2011). If useful effects of the drug is approved, its use in treating these patients will lead to decrease of mental stress resulting from extended and long-term lesions and prevent from patients frequent referring to physicians and, probably, using relatively dangerous and disease-intensifying treatment methods (Daghigh *et al.*, 2013; Nemati *et al.*, 2013; Qadim *et al.*, 2013).

### MATERIALS AND METHODS

**Subjects:** This clinical trial study evaluates therapeutic effects of oral erythromycin on patients suffering from pityriasis rosea. The understudy population was consisted of 50 voluntary patients referring to skin clinic from Sep. 2010 for two years. The disease was definitely diagnosed based on typical clinical manifestations.

**Methods:** Demographic information including age, gender and other information such as recent records of upper respiratory system infection, records of receiving drug within the last one month, itching and methods of lesions dispersion were obtained and registered in the prepared questionnaires. The patients were randomly and alternatively divided into two groups. The first group received 400 mg of erythromycin tablet three times a day (children daily received 25-40 mg kg<sup>-1</sup>) and chlorpheniramine tablet three times a day (children received 5cc of diphenhydramine syrup every 8 h) and the second group received placebo including chlorpheniramine TDS tablet (children received 5cc of diphenhydramine syrup every 8 h). The patients were

revisited 7 and 14 days after starting the treatment. Patients' evaluation and follow-up included clinical evaluation considering recovery rate of dermal symptoms, developing of new lesions, decreasing or disappearing of previous lesions with evaluation of erythema changes, exfoliation and pigmentation. Based on clinical findings, the patients were divided into three groups: (a) Complete response as disappearing of the lesions within two weeks after treatment and non-developing of new lesions, (b) Relative response as decreasing of erythema and size of lesions, developing less number of new lesions and disappearing of less number of the lesions and (c) Non-response with no changes in size, exfoliation severity and erythema of lesions or developing of new lesions within two weeks after starting the treatment.

**Statistical analysis:** SPSS version 16 was used as analytical software. Chi-square test was used to determine clinical difference of those results stated as percentage and t-student test was applied to determine difference between means and Fischer test was used when required.  $p < 0.05$  was regarded as meaningful.

## RESULTS

According to calculations of Chi-square test, there was no meaningful difference in variables of age, gender, records of upper respiratory system infection. Records of respiratory system infection were 72 and 68% in the treatment and placebo groups, respectively. There was no meaningful difference in this regard. Mean age of patients was about  $19.28 \pm 6.68$  years and there was no significant difference between the treatment and placebo groups in this regard. Female to male ratio is 3:2. Average time of disease was about 15 days from starting the lesions to referring to treatment. There was itching in one third of the understudy patients. In the group receiving erythromycin, the complete response rate was meaningfully different from that of the placebo group after two weeks (Table 1). There was no complete response in the placebo group, while it was 64% in the treatment group (16 patients out of 25 ones). Relative response was the same for both treatment and placebo groups. Non-response to treatment in the placebo group was meaningfully more than that of the treatment group. Therefore, drug treatment was evidently useful than placebo in treating pityriasis rosea.

Table 1: Patients' response to treatment in treatment and placebo groups

	Treatment group (%)	Placebo group (%)	p-value
Complete response	16 (64%)	0	0.0001
Relative response	5 (20%)	5 (20%)	0.6810
Non-response	4 (16%)	20 (80%)	0.0150

## DISCUSSION

In this study, age mean of the patients was 19 years. According to the reports, the disease is more prevalent in the 10-35 age group which is in correspondence with our study (Bachmann *et al.*, 2007). The ratio of female to male was 3:2. Most available scientific resources indicate that the disease is more prevalent in women than men. But, some resources reported that the disease is more prevalent in men (Brar *et al.*, 2003; Fardiazar *et al.*, 2013; Salehi *et al.*, 2013d; Soleimanpour *et al.*, 2013). In this study, prevalence of upper respiratory system infection before appearing disease symptoms is 72% if the treatment group. The results are the same as the previous reports (Mavarkar, 2007). Relationship with previous respiratory system infection indicates probability of an infectious factor as pathogen of the disease. In the present study, the lesions were completely recovered within 2 weeks of treating with erythromycin in 64% of patients. It has been reported 73.3% in a similar study (Chuh and Kempf, 2006). The number equals zero in the placebo group indicating strong and positive effects of the drug in quick recovery of the lesions. The lesions recovery within the first two weeks weakens the theory of their automatic recovery (Ganjpour Sales *et al.*, 2013; Salehi *et al.*, 2013a, 2013c). On the other hand, effects of erythromycin strengthen the probability of role of erythromycin-sensitive microbial factors in developing the disease (Farhoudi *et al.*, 2012; Nourizadeh *et al.*, 2013; Seyyednejad *et al.*, 2012). In this study, 20% of patients of both groups had relative response to the treatment; therefore, these two groups were not different. The results are the same as that of a similar study (Kyriakis *et al.*, 2006). The relative response may indicate existence of microbial factors with a relative resistance against erythromycin (Ganjpour Sales *et al.*, 2012; Nikanfar *et al.*, 2012; Sadeghpour *et al.*, 2012). In placebo and treatment groups, 80 and 16% of patients did not response to the treatment, respectively ( $p = 0.015$ ). Non-response to treatment in 4 patients of the treatment group indicates probability of existence of the organisms resisting against erythromycin. On the other hand, there was about 15 days time interval between starting the clinical symptoms and drug prescription. It is very important point whether earlier referring to physician and, as a result, starting antibiotic treatment will quickly shorten treatment period or increase effective result of the drug (Karzar *et al.*, 2012; Shakeri *et al.*, 2013; Vahedi *et al.*, 2012).

## CONCLUSION

Considering the present study, strong and positive effects of erythromycin in shortening the pityriasis rosea disease period, its quicker recovery, lack of drug complications during two weeks of treating with erythromycin as well as unstable effects and significant complications of the suggested treatment methods such as dapsone and ultraviolet, it is recommended to treat the patients suffering from pityriasis rosea at any time of disease diagnosis using oral erythromycin for a two-week period.

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