

Comparative study between oral azithromycin and erythromycin in male patients with severe papulopustular acne.

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الخلاصة:

حب الشباب من الأمراض الشائعة التي تصيب الشباب بنسبة 79-95% ويعتبر عقار لازيثرومايسين من العلاجات الحديثة المستعملة لهذا الغرض وهو مشتق من عقار لارثرومايسين و كلاهما من مجموعة الماكرولايد.

تهدف الدراسة إلى المقارنة بين تأثير عقار لازيثرومايسين و عقار لارثرومايسين لدى المرضى الذكور المصابين بحب الشباب الشديد من النوع الحبيبي والمتقيح والمعالجون موضعياً بالبنزويل بيروكساید والارثرومايسين.

أنجزت الدراسة على أربعين مريضاً تم تقسيمهم إلى مجموعتين متساويتين المجموعة الأولى أعطيت دواء الازيثرومايسين اما المجموعة الثانية فقد أعطيت دواء الارثرومايسين و كلتا المجموعتين عولجت موضعياً بالبنزويل بيروكساید ولارثرومايسين (الجل) ، تم تقييم استجابة المرضى خلال زيارتهم في نهاية الأسبوع الرابع، الثامن والثاني عشر من العلاج.

أظهرت الدراسة وبالرغم من النقصان الكبير بمتوسط معدل الكولبل لحب الشباب في المجموعة الأولى بالمقارنة مع المجموعة الثانية، لا يوجد أي فرق معنوي إحصائياً $P > 0.05$ ، وكما أظهرت النتائج أن 85% من المرضى في المجموعة الأولى الذين أكملوا العلاج كانت استجاباتهم موجبة، بالمقارنة مع 75% في المجموعة الثانية.

استنتجت الدراسة ان هناك تحسناً سريرياً واضحاً لدى المرضى الذين عولجوا بدواء الازيثرومايسين ولكن ليس إلى المستوى الإحصائي المعنوي.

Abstract

Back ground: Acne vulgaris is a common disorders affecting 79-95% of the adolescent population . Azithromycin is one of systemic antibiotic that has been recently prescribed for treatment of acne. This nitrogen- containing macrolide is a methyl derivative of erythromycin.

Aim of work: To compare between the effect of oral azithromycin and erythromycin in male patients with severe papulo pustular acne treated with topical benzoyl peroxide and erythromycin drugs.

Patients and methods: Forty male patients were divided into two equal groups, the first were given oral azithromycin and the second were given erythromycin , both groups were treated with a topical erythromycin and benzoyl peroxide gel .The patients responses evaluated in each visit at the end of 4, 8 and 12 weeks of treatment .

Results: Although there was more reduction in the mean acne global score showed in the group 1 when compared with the group 2 , this difference was not a statistically significant, $P > 0.05$. This study also showed that 85% of patients who completed the treatment had a positive response in a group 1 in a comparison to 75% in a group 2.

Conclusion: There was a better clinical improvement in patients treated with azithromycin , but not to a statistically significant level.

Keywords: Azithromycin, papulopustular-acne and erythromycin .

Introduction:

Acne vulgaris is a common disorders affecting 79-95% of the adolescent population(1). It involves excessive sebum production; abnormal epithelial hyperkeratinization in sebaceous follicles; the presence of microbial organism, notably the anaerobic propionobacterium acne and inflammation(2).The choice of treatment depends on the severity,patients with mild acne should receive topical therapy such as benzoyl peroxide, retinoid and topical antibiotic(3). Systemic antibiotics such as doxycycline ,minocycline and erythromycin are required in cases with moderate to severe acne in addition to hormonal therapy and oral retinoid(4,5). Azithromycin is one of the antibiotics that has been recently prescribed for treatment of acne (6). This nitrogen-containing macrolide is a methyl derivative of erythromycin, its clinical uses are similar to those of erythromycin(7) with extensive tissues binding and long half life (8).Several studies have reported that azithromycin, 500mg thrice weekly , appear to be a safe and effective treatment for acne vulgaris in adolescents, with excellent patient compliance(9), and its low dose is as effective as a high dose with lower cost and fewer side effects in treatment of patients with moderate to severe acne(10).

Patients and methods:

The study was conducted in private clinic in Najaf city from Jan 2009- Jan 2010. A fourty male patients age(15-25years) were included in this study with severe papulopustular acne (31-38 score) assessed by global acne grading system(GAGS) (11). Patients on topical retinoid or anti-androgen drugs were excluded from our study.

Study Design:

The patients were divided into two groups , each of 20 patients:

Group 1:Azithromycin (Co.Riba pharma.Eygypt) 500mg thrice weekly with topical erythromycin(Co.Al Shabaa lab.Syria) and benzoyl peroxide (Co.Pharaonia.Eygypt)gel for 12 weeks.

Group 2:Erythromycin 500mg twice daily with topical erythromycin and benzoyl peroxide gel for 12 weeks.

All patients were assessed by exact clinical examination including a full face count of papular and pustular lesions. The number of lesions was calculated at the beginning of the treatment (baseline) and in each visit at 4th ,8th and 12th weeks to observe the difference between the number of lesions at baseline and the number seen in subsequent examinations and to evaluate the efficacy of therapy . Those with less than 20% were regarded as negative response and those with more than 20% were regarded as positive response (12).

Statistical analysis:A probability value < 0.05 was considered statistically significant . Paired T test was used between treatment groups.

Results:

Although there was more reduction in the mean global score showed in the group 1 when compared with the group 2 , this difference was not a statistically significant, P>0.05 (table 1).

This study showed that 85% of patients in group 1 who completed the treatment have a positive response(70% with good results and 15% with moderate results) (table 2).

This study showed that 75% of patients in group 2 who completed the treatment have a positive response(50% with good results and 25% with moderate results) (table 3).

Table (1) : Mean values of acne global score± standard error at different Periods of treatment. Each value is the mean of 20 patients.

Group	Baseline	4th wk	8th wk	12th wk
1	* 35.4±4.9	* 25.1±2.3	* 13.9±4.5	* 10.7±2.2
2	* 34.9±3.6	* 30.2±5.8	* 21±5.1	* 14.3±3.2

***No statistically difference between two groups at different periods of treatment
P>0.05.**

Table(2): Numbers and percentages of patients responses in group 1 at different periods of treatment assessed by a reduction in mean facial lesion count.

Response to treatment		4th wk	8th wk	12th wk
Negative <20%		5 25%	3 15%	3 15%
Positive	Moderate 20-50%	6 30%	5 25%	3 15%
	Good > 50%	9 45%	12 60%	14 70%

Table(3): Numbers and percentages of patients responses in group 2 at different period of treatment assessed by a reduction in mean facial lesion count.

Response to treatment		4th wk	8th wk	12th wk
Negative <20%		8 40%	6 30%	5 25%
Positive	Moderate 20-50%	6 30%	5 25%	5 25%
	Good > 50%	6 30%	9 45%	10 50%

Discussion:

Erythromycin, commonly used for years in treatment of acne, has been shown to be as efficacious as the tetracycline in several studies (13,14). In addition, erythromycin is not a photosensitizing agent in summer months. Because of favorable pka profile of azithromycin and increased reports of propionobacterium resistance to erythromycin which is about 65% (15), our study focused on the use of azithromycin in a comparison with pre-mentioned drug.

Although there is no significant changes between the two groups, there is a highly decrements in facial acne lesions with improvement in 17 patients (85%) at end of the treatment in the first group in comparison to 15 patients (75%) in second group, this is in agreement with study done by Gruber et al 1998 (16) and by Fernandez-Obregon in 1997 (17).

This difference in patients responses could be explained by the pharmacokinetic profile of azithromycin which is characterized by rapid uptake from blood to tissues at concentrations more than 10 times that of erythromycin, with a long half life approximately 68hours(18) ,furthermore, the medication remains in intracellular compartments for prolonged period at level higher than the minimum inhibitory concentration for many pathogens gives another explanation for the results obtained in our study(19). Another explanation done by Fernandez- obregon in 2000 (6) who found that azithromycin causes fewer gastrointestinal symptoms,with potential for improved compliance because of higher tolerability profile and a long half life.

Conclusion: Although there was a clinical improvement in patients received azithromycin , this improvement was not reached a statistical significance.

Recommendations:

- 1-Further studies are recommended to clarify the effect of azithromycin on other patients group like female , steroid acne.
- 2-Further study is also required to compare between the effectiveness of azithromycin and doxycycline in treatment of male patients with severe acne.

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