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COMPARISON OF CLARITHROMYCIN VS AZITHROMYCIN IN TREATING ACUTE PHARYNGITIS , TONSILLITIS AND TONSILLOPHARYNGITIS IN CHILDREN AGED BETWEEN 5 YRS TO 15 YRS ON THE BASIS OF CLINICAL PARAMETERS

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Abstract

Upper respiratory infections are the one of the most common infectious diseases in children. Streptococcal pharyngitis is the most common bacterial infections in children. The widespread use of penicillin VK has been limited in some countries due to increasing percentage of therapeutic failures. Tolerance to the penicillin or the presence of lactamase producing copathogens may be the reasons for this. Very less studies have been performed in children regarding best drug used for upper respiratory infections. Clarithromycin and azithromycin have been compared in the treatment of upper respiratory infection like pharyngitis and tonsillitis in children between 5yr to 15 yr. in the study involving 60 patients.

Key words: Clarithromycin, Azithromycin, Pharyngitis

Introduction:

Azithromycin an azalide, a subclass of macrolides, and clarithromycin a semisynthetic macrolide, have been available in for about a decade. Majority of bacterial upper respiratory tract infections are caused by group A Beta-haemolytic streptococcus *(Streptococcus pyogenes)* [1].Antibiotic therapy can shorten the clinical course[2, 3], but it can be resolved of is own. The main reason that antibiotic therapy is being given for the eradication of the organism from the upper respiratory tract so that rheumatic fever do not occur [4-6].Penicillin has been used widely as gold standard for the respiratory tract illness, although other antibiotics have also shown to be effective in treating upper respiratory infections. These include penicillin congeners (e.g., amoxyclav), third line cephalosporins and macrolides also. Although oral antibiotics are given for a duration total of 10 days to kill the commonest organisms causing pharyngitis. For short period antibiotic therapy newer agents like macrolide group antibiotics are equally effective [7-9]. Azithromycin as well as clarithromycin both drugs are commonly prescribed for the treatment of upper and lower respiratory tract infections because of their enhanced activity, convenient dosing, and good tolerability. In 1993, 17.7 million macrolide prescriptions were made and by the year 1999, the number of

prescriptions increased by 20% and the resistance to macrolides for pneumococcal infections also increased by 9.8% [10].

Method

The following observational study was conducted in Civil Hospital Jwalamukhi District Kangra, Himachal Pradesh aimed to compare oral azithromycin and clarithromycin in children with clinically suspected bacterial pharyngitis/tonsillitis/tonsillopharyngitis aged between 5yrs to 15 yrs. The inclusion criteria were following:

1. Fever for more than 3 days with h/o sore throat.

2. On examination congested throat with or without tonsillar enlargement.

3. Tender cervical lymphadenopathy.

Those individuals who took any antibiotic prior to presentation to hospital were excluded. This study included total of 60 patients. Among them 30 children were prescribed oral clarithromycin @15mg/kg in 2 divided doses up to a maximum of 500mg in 24hrs for 7 days and rest 30 of the patients were prescribed azithromycin@ 10 mg /kg per day single daily dose for 5 days. Same brand was prescribed in all clarithromycin and azithromycin patients.

Outcome measures

Following factors were compared in both of drug groups.

1. Days required for fever to subside.

2. Days required to relieve sore throat.

Regular follow-up after 3 days and after 7 days was done and the required observations/data were noted.

Statistical analysis

Data were presented as frequency, percentage, mean, standard deviation and Standard error Mean. Quantitative and qualitative variables were compared using Student t-test and Chi square test. P value less than 0.05 was considered significant. Statistical analysis was performed using SPSS v21.0.

Results

A total of 60 patients were studied for the final outcome based on observations after 3days and after 7 days of antibiotic therapy in both of groups. Total no. of males in azithromycin study group were 14 and 16 were females. The males in clarithromycin study group 16 and 14 were female as shown in Table1 below. Mean age in azithromycin study group was 9.97±3.5yrs and in clarithromycin group was 9.77±3.5 yrs. We found that in clarithromycin group the fever subsided in with mean duration of 3.03±0.66 days and fever subsided in azithromycin group in 4.04±.72 days these findings were also statically significant. Our study also found that clarithromycin took less time in relieving the sore throat with mean duration of 2.5±.50 day's vs azithromycin which took 3.47±0.77 days which further proved to be statically significant shown below in Table 2. In our study four patients in azithromycin did not improved clinically in fever and sore throat even after completion of therapy. The cure rates in the clarithromycin group vs azithromycin group were 100% vs 86.7%.

Table 1. Show sex distribution between clarithromycin and azithromycin group

		Group		Total
		Azithromycin	Clarithromycin	
sex	female	14	16	30
	male	16	14	30
Total		30	30	60

Table 2. Show different variables with mean, standard deviation and standard error mean

Variable	Group	N	Mean	Standard Deviation	Standard Error Mean
Age in years	Azithromycin	30	9.97	3.53	0.65
	Clarithromycin	30	9.77	3.53	0.64
Day at which fever subsided	Azithromycin	26	4.04	0.72	0.14
	Clarithromycin	30	3.03	0.67	0.12
Sore throat relieved on day	Azithromycin	30	3.47	0.77	0.14
	Clarithromycin	30	2.50	0.51	0.93

Discussion

This study has demonstrated that the efficacy in treatment of upper respiratory tract illness obtained with clarithromycin @ 15mg/kg/day in two divided dosages over five days is clinically more efficacious in reducing the sore throat and with regard to subsidence of fever taking less time to improve clinically as evidenced on follow-up after 3 days and 7 days with statically significant values as compared to azithromycin single daily dose for 5 days which took more time in resolution of the above symptoms clinically. Both treatments were equally well tolerated and there was no significant difference in the frequency of gastrointestinal side-effects between the treatment groups. In the azithromycin group 4 children did not relieved in symptoms of sore throat and fever even after completion of treatment attributing to likely resistance of the organism to azithromycin. A very few study data is available regarding the comparison of efficacy of both drugs. However In 1997, Kearsley, et al., compared in 229 paediatric patients aged 1-12 years with clinical evidence suggestive of streptococcal tonsillitis and/or pharyngitis clarithromycin suspension (7.5 mg/kg twice daily) or amoxycillin syrup (125 mg/kg three times daily for body weight < 25 kg, or 250 mg/kg three times daily for body weight 25 kg) for 7 days and were followed up 3-8 days post treatment and after 21-28 days. Clinical and microbiological assessments were made at each visit. A total of189 patients (98 patients on clarithromycin and 91 patients on amoxycillin) were clinically evaluable. At the post treatment visit, clinical success rates were very high and comparable: 98% on clarithromycin and 97% on amoxycillin. Streptococcus pyogenes was eradicated in 88% of clarithromycin patients and 86% of amoxycillin patients[11]. Thus this study let consider that clarithromycin is a safe, effective and superior alternative for other macrolides like azithromycin for the treatment of URIs in pediatric patients. Its higher equivalence profile related to clinical cure, clinical success and early symptom clearance, let to consider it as an important alternative for the

treatment of children with upper respiratory infections, such as acute pharyngitis/acute tonsillitis/acute tonsillopharyngitis.

Conclusion: In comparison to oral azithromycin the oral clarithromycin can be better alternative for treating clinically diagnosed cases of acute pharyngitis/acute tonsillitis/acute tonsillopharyngitis for rapid symptomatic relief and to achieve high cure rates.

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