

Comparison of Effectiveness of Oral Fluconazole and Intralesional Glucantime in the Treatment of Cutaneous Leishmaniasis

Fluconazole and Glucantime in the Treatment of Cutaneous Leishmaniasis

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ABSTRACT

Objective: To Assess the Effectiveness of Oral Fluconazole and Intralesional Glucantime in the treatment of Cutaneous Leishmaniasis.

Study Design: Randomized Control Trial study

Place and Duration of Study: This study was conducted at the Dermatology Department, PIMS Islamabad from April 2014 till November 2014.

Materials and Methods: The study was composed of 240 patients and they were equally divided into two groups by lottery method. In Group A, 120 patients were given oral Fluconazole daily for 6 weeks while in Group B, 120 patients were given intralesional Glucantime for 21 to 28 days. All the data was recorded on a structured proforma. Chi square test was used to compare efficacy between the two groups.

Results: In Group A, 99 patients showed complete resolution of the lesions while 21 showed no resolution after treatment with oral Fluconazole for 6 weeks. In Group B, 109 patients showed complete resolution while 11 showed no resolution with intralesional Glucantime. The difference between the groups was significant with p value of less than 0.05.

Conclusion: Intralesional Glucantime is significantly more effective than oral Fluconazole in the treatment of Cutaneous Leishmaniasis.

Key Words: Oral Fluconazole, Intralesional Glucantime, Cutaneous Leishmaniasis

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INTRODUCTION

Cutaneous Leishmaniasis (CL) is a zoonotic disease, caused by a protozoan parasite of the genus *Leishmania* and spread by the bite of an infected female sand fly¹. About 1.5 million new cases of CL are emerging annually and about 350 million people remain at risk². In Khyber Pukhtunkhwa, approximately 67,500 people are infected with Cutaneous Leishmaniasis³. Male to female ratio is 2:1 because of increased exposure of the male to the habitat of the sand fly through occupation and working in agricultural environment⁴. This RCT was conducted in Dermatology Department of PIMS Islamabad from 4th April 2014 till 3rd November 2014.

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MATERIALS AND METHODS

A total of 240 patients were included in the study between the ages of 20-70 years. Patients excluded from the study were those with Visceral Leishmaniasis, already on medications for Cutaneous Leishmaniasis, pregnant and lactating women and those with chronic disease e.g. cirrhosis and chronic renal failure. Sample size was calculated through WHO software. Approval was taken from ethical committee of the institution. Patients were enrolled by non-probability consecutive sampling. Written informed consent was taken from the patients.

Randomization was done through lottery method and the patients were divided into two groups. Group A patients were given oral Fluconazole 200 mg daily for 6 weeks while Group B patients were given intralesional Glucantime daily for 3 to 4 weeks. All the patients were then regularly followed up on weekly basis till complete resolution of the lesion. All the data was recorded on a structured proforma. For follow up contact numbers of patients were recorded.

Data was analyzed on SPSS version 17. Comparison of efficacy between the two groups was done by chi square test. The P value ≤ 0.05 was considered significant with 95% Confidence Interval. Stratification

of effect modifiers like age, gender, site of lesion and duration was done and post stratification chi square test was used for significance.

RESULTS

In our study out of 240 patients 180 were male and 60 were female. Group A had a mean age of 35.14 years while Group B had 35.28 years.

Table No.1: Descriptive statistics of Age n=240

Total number of Patients	240
Mean	35.21
Std Deviation	12.564
Minimum	14
Maximum	70

Table No.2: Table with cross tabulation of Groups with age showing Mean age in both groups

Age			
Groups	Mean	N	Std. Deviation
Fluconazole	35.14	120	11.794
Intralesional Glucantime	35.28	120	13.339
Total	35.21	240	12.564

p=0.937

The cross tabulation of both groups with Gender distribution is shown in table 3.

Table No.3: Gender Groups Cross tabulation

Count				
		Groups		Total
		Fluconazole	Intralesional Glucantime	
Gender	Male	95	85	180
	Female	25	35	60
TOTAL		120	120	240

P= 0.137

Stratification of Age & Successful Outcome with Fluconazole

Table 4: Crosstab Age of patient with successful outcome with Fluconazole

COUNT		Success Fluconazole		Total	P value
		Yes	No		
Age Range	15-30 years	30	6	36	0.613
	31-45 years	35	5	41	
	46-60 years	23	6	29	
	60 n above	11	4	15	
Total		99	21	120	

Stratification of Age & Successful Outcome with Glucantime

There was no significant difference for age and gender in both the groups. Regarding location of lesion 128 (53.3%) patients had lesions on the face, 68 (28.3 %) had lesions on the neck and 44 (18.3 %) patients had lesions on their arms. Majority of the patients i.e. 93 (38.75 %) in both the groups had presented within two months while only 21 (8.75%) had presented by 1 year. 99 patients (82.5 %) in Group A showed successful resolution of the lesion while 109 patients (90.8%) had successful outcome in Group B with significant P value of 0.05.

The mean age of the patient was 35.2 ±12.5 year with a range of 14-70 year.

Table No.5: Crosstab Age of patient and successful outcome with Glucantime

COUNT		Success Glucantime		Total	P value
		Yes	No		
Age Range	15-30 years	34	3	37	0.506
	31-45 years	39	4	43	
	46-60 years	27	2	29	
	60 n above	09	2	11	
Total		109	11	120	

Stratification of Gender and Successful Outcome with Fluconazole

Table No.6: Gender Success Fluconazole Cross tabulation

COUNT		Success Fluconazole		Total	P value
		Yes	No		
Gender	Male	77	18	95	.416
	Female	22	3	25	
Total		99	21	120	

Stratification of Gender and Successful Outcome with Glucantime

Table No.7: Gender Success Glucantime Cross tabulation

COUNT		Success Glucantime		Total	P value
		Yes	No		
Gender	Male	86	9	95	.820
	Female	23	2	25	
Total		109	11	120	

Stratification of Duration of Disease & Successful Outcome with Fluconazole

Table No.8: Crosstab Disease duration with successful outcome with Fluconazole

COUNT		Success Fluconazole		Total	P value
		Yes	No		
Disease Duration	2 months	45	4	49	>.05
	4 months	35	5	40	
	6 months	19	6	25	
	1 year	0	6	10	
Total		99	21	120	

Stratification of Duration of Disease & Successful Outcome with Glucantime**Table No.9: Crosstab Disease duration with successful outcome with Glucantime**

COUNT		Success Glucantime		Total	P value
		Yes	No		
Disease Duration	2 months	45	3	48	>.05
	4 months	35	3	38	
	6 months	29	3	32	
	1 year	0	2	02	
Total		109	11	120	

Table No.10: Stratification for Lesion on Face with Successful Out Come in Both Groups

Face	Success-ful	Not Success	Total	P value
Group A (Fluconazole)	54	12	66	<.05
Group B (Glucantime)	57	05	62	
Total	111	17	128	

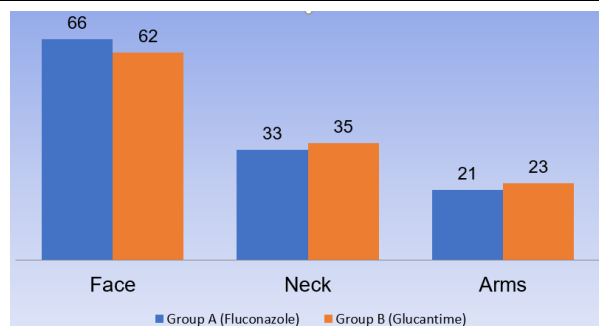
Table No.11: Stratification for Lesion on Neck with Successful Out Come in Both Groups

Neck	Success-ful	Not Success	Total	P value
Group A (Fluconazole)	29	05	34	<.05
Group B (Glucantime)	32	04	36	
Total	61	09	70	

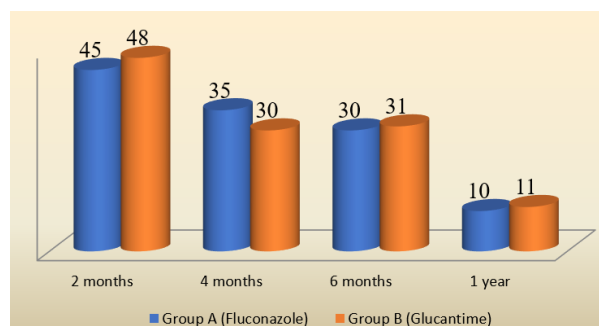
Table No.12: Stratification for Lesion on Arms with Successful Outcome in Both Groups

Arms	Success-ful	Not Success	Total	P value
Group A (Fluconazole)	16	04	20	<.05
Group B (Glucantime)	21	02	22	
Total	37	06	43	

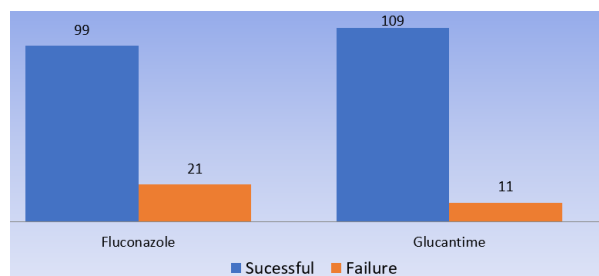
SITE OF LESION n=240

**Figure No.1: Bar graph showing different sites involved in cutaneous leishmaniasis**

DURATION OF DISEASE n=240

**Figure No.2: Graph showing number of patients with duration of diseases in months**

FINAL OUTCOME OF THE DISEASE n=240

**Figure No.3: Bar graph showing comparison of success and failure in both groups Pearson chi square $p < .05$.**

A study done by Rifat Yasmin¹³ in 2011 reported cure rate of 100 % but due to a small sample size of only 15 patients the results cannot be claimed with certainty, while our study is based on a larger sample size of 240 patients. Our study also deems better than the study by Firdous et al¹⁴ (83 %) with a sample size of more than 200 patients and more elaborate than that of Munir A¹⁵ who had a sample size of 20 patients and success rate of 75%. A study by Anastácio Q et al¹⁶ in 2011 reported success rate of 89 % with oral Fluconazole while success rate of oral Fluconazole in our study was 82.5 % which matches national and international data. The Pearson chi square has come to be significant $p=0.001$ in favor of intralesional Glucantime which matches the data. It is worth mentioning that oral Fluconazole is a clinically effective alternative; it is

tolerable due to a better side effects profile because of its oral route of administration and is also an affordable alternative. Therefore, based on the patient's situation, oral Fluconazole can be used as an effective alternative treatment of Cutaneous Leishmaniasis.

Our study, however, has not proved with certainty any significant association between age, gender, site of lesion and duration of disease for both the groups which are in accordance with literature.

DISCUSSION

At 8 weeks follow up it was found that effectiveness of intralesional Glucantime was seen in 109 patients (90.8%) compared to 99 patients (82.5 %) who were given oral Fluconazole. In our study the total number of male patients was 180 (75%) and 60 (25%) were female patients similar to Giavedoni P et al⁸, Tallat et al⁷, Singh A et al⁹, who all reported CL to be more prevalent in male gender ranging from 60 -80 %. It shows that Cutaneous Leishmaniasis is more common in men. In our study the mean age of patients in both groups was about 35 years. Turhanoglu M.¹⁰ study on 128 patients also reported that 70% of patients with Cutaneous Leishmaniasis age lies in range of 20-40 years. Results of our study also matches with study of Tallat et al⁷ and Salman IS et al¹¹.

Regarding the duration of the disease, mean duration of illness reported by Giavedoni P et al⁸ was 3 months and 3.4 months by Salman¹¹ respectively, while our study showed that 158 patients (65.83 %) out of total 240 in both groups had a history of 2-4 months' time with a mean duration of 3.2 months which is in accordance with national and international data. Regarding the involvement of site, our study showed that face and neck are the most commonly involved areas i.e. (82 %) in both groups while arms were involved in 18 %. Our this finding is duly endorsed by Hayani K et al¹².

CONCLUSION

Intralesional Glucantime is more effective than oral Fluconazole. However, Fluconazole is an effective alternative in patients with Cutaneous Leishmaniasis in selective situations.

Author's Contribution:

Concept & Design of Study:	Samina Sheraz
Drafting:	Kashif Kamal
Data Analysis:	Kashif Kamal
Revisiting Critically:	Samina Sheraz, Kashif Kamal
Final Approval of version:	Samina Sheraz

Conflict of Interest: The study has no conflict of interest to declare by any author.

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