

**A STUDY ON DRUG PRESCRIPTION PATTERN IN ALLERGIC CONTACT DERMATITIS AT TERTIARY CARE TEACHING HOSPITAL IN SOUTH INDIA**Vishal P. Giri<sup>1</sup>, Om P. Giri<sup>2</sup>, Shubhra Kanodia<sup>3</sup>**HOW TO CITE THIS ARTICLE:**

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**ABSTRACT: BACKGROUND:** Allergic contact dermatitis (ACD) is a common inflammatory skin disease. Appropriate and effective drug therapy can ensure immense therapeutic benefit in patients suffering from ACD. The study was carried out to find out prescribing pattern in ACD at a tertiary care teaching hospital in south India. **METHODOLOGY:** Patients of allergic contact dermatitis who attended Dermatology outpatient department of KVG Medical College and hospital were the subjects of study. Prescription patterns and other relevant findings were recorded in proforma for analysis and interpretation of data. **RESULTS:** 209 patients of ACD were included in the study group. Topical corticosteroids and antibiotics were prescribed as monotherapy and polytherapy. Corticosteroids, antibiotics, antihistaminics were prescribed as systemic monotherapy and polytherapy. Statistical analysis revealed p-value was > 0.05. **CONCLUSIONS:** Prescription patterns were in consensus with the general guidelines, with few changes perhaps, in the choice of established therapeutic agents.

**KEYWORDS:** Allergic contact dermatitis, Prescribing patterns.

**INTRODUCTION:** Allergic contact dermatitis (ACD) is a common clinical entity. It is an eczematous rash that develops after contact with an agent to which delayed hypersensitivity has developed. In some instances bacterial infections (impetigo, pustular dermatitis) are superimposed on original dermatitis.

Clothings, earrings, jewelry, watches, clasps, wrist bands, jeans buttons, rubber shoes, elastic stockings, adhesives, rubber gloves, cosmetic fragrances, hairdyes, hair spray, shampoo, permanent wave solution, shaving agents, moisturizers, conditioners, nail products, lipstick, eye makeup, sunscreen lotion, bleaching creams, lanolin, mouth washes, axillary antiperspirants, axillary deodorants, feminine hygiene spray, brassiers, pants, undergarments and spectacles commonly lead to development of allergic contact dermatitis.

In addition to these, topical drugs (anesthetics, antimicrobials, phenothiazines) are also responsible for the disease. Thus it can affect scalp, trunk, axilla, arms, hands, abdomen, shins and feet. Treatment includes topical corticosteroids.<sup>1</sup>

Prescription writing is a science and art, as it conveys the message from the prescriber to the patient. The pattern of drug use in a hospital setting need to be monitored intermittently in order to analyse the rationality and offer feedback and /or suggestions to drug prescribers for suitable modifications in the prescription pattern so as to increase the therapeutic benefit and reduce adverse effect.<sup>2</sup>

Aims and objectives of the present study were to scrutinize the trends in the prescribing practices in allergic contact dermatitis cases in a teaching hospital.

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**MATERIALS AND METHODS:** A prospective and observational study was carried out in the outpatient department of dermatology at KVG Medical College, Sullia. Two hundred nine (209) prescriptions of ACD patients were collected during the period January 2011 to June 2012 by investigator in person and demographic data (age, gender), disease data (ACD), data pertaining to drugs (drugs prescribed, dose, strength, route) and data pertaining to adverse effects, if any, were recorded in a proforma designed for this purpose.

These data were analyzed to evaluate the prescription pattern and rationality of the use of drugs in the treatment of ACD. The data collected were subjected to statistical analyses and the relevant statistical methods employed were chi-square test, t-test and determination of df (degree of freedom) and p-value.

**RESULTS:** 209 cases of allergic contact dermatitis (ACD) were observed out of total 1134 cases of inflammatory and infective skin diseases recorded during the study period. Amongst all cases of ACD, 105 patients were males and 104 females. Majority (80) of patients belonged to age group 21-40 years, 47 (41-60 years), 45 (61-80 years), 33 (11-20 years) and 4 (6-10 years).

Topical monotherapy was prescribed in 77 males and 79 females. Topical clobetasone butyrate (0.05 %) was prescribed in 85 patients (45males, 40 females) and clobetasol propionate (0.05%) was prescribed in 36 patients (17 males, 19 females). Betamethasone (0.05%) was advised in 20 cases (10 males, 10 females). Topical polytherapy was prescribed in 28 males and 25 females.

Thus betamethasone valerate (0.01%) and fusidic acid (2%) topical combination was received by 53 patients. On statistical analyses, unpaired t-test between males and females being treated with topical monotherapy revealed T score 0.0439, 95% C I of difference -28.3767 to 27.3767, df - 6 and p value > 0.05. While chi square test revealed Chi-square 0.0771, DF 1, Significance level P=0.7813 and Contingency coefficient 0.0192. And p value > 0.05. [Table 1].

Systemic drugs were prescribed as monotherapy in 20 male and 23 female cases. Levocetirizine was advised in 4 males and 3 females. Azithromycin was received by 16 male and 20 female patients. Systemic polytherapy consisting of Cefadroxyl and levocetirizine were prescribed in 20 males and 20 females. 65 male and 61 female patients received systemic polytherapy of prednisolone, levocetirizine and ranitidine.

On statistical analyses, Unpaired t-test between males and females being administered systemic monotherapy revealed Difference 1.5000, Standard Error 10.4043, 95% CI of difference -43.2662 to 48.2662, Test statistic t 0.144, Degree of Freedom (DF) 2, Two -tailed probability P=0.8986. Unpaired t test for patients on systemic polytherapy, males and females, revealed Difference -2.0000, Standard error 30.4385, 95% CI of difference -132.9661 to 128.9661, Test statistic t -0.0657, Degrees of Freedom (DF) 2 and Two-tailed probability P=0.9536.

Chi square for patients being treated by systemic monotherapy and systemic polytherapy revealed Chi-square 0.142, DF 1 and Significance level P = 0.7058. [Table 2]

**DISCUSSION:** International guidelines for management of allergic contact dermatitis (ACD) recommend topical corticosteroids (TCs) as first-line treatment of localized forms of ACD. Selection of TC for efficacy and potency is determined by size of lesion, the location of the dermatitis and the phase of evolution (i.e., acute or chronic). Localized acute lesions respond best to moderate potency or high potency TCs (triamcinolone 0.1% or clobetasol 0.05 %).

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If ACD involves extensive disease (20 % of body is involved) systemic corticosteroid therapy (oral prednisolone 0.5 to 1 mg /kg/day for 1 to 3 weeks) is indicated. It provides relief within 12 to 24 hours. Although antihistaminics are generally not effective for pruritus associated with allergic contact dermatitis they are commonly used.

Sedation more soporific antihistaminic (e.g diphenhydramine, hydroxyzine) may offer some degree of relief. Allergic contact dermatitis may be complicated by bacterial super infection and bacterial culture should be considered with the presence of exudates weeping and crusting. Topical and systemic antibiotics should be used for secondary infection of ACD.

Fusidic acid plus betamethsone combination topical use has been recommended in infected or potentially infected ACD. Marginal benefit been demonstrated with their use. Emollients, moisturizers, and /or barrier creams may be instituted as secondary prevention strategies for continued exposure. Immunomodulatory agents, such as azathioprine, cyclosporine have been recommended for refractory ACD.<sup>3,6</sup>

**CONCLUSION:** Modest prescribing practices were evident in the hospital where this study was carried out and the prescription patterns in ACD were in consensus with the general guidelines in vogue, with few changes perhaps, in the choice of established therapeutic agents. In most prescriptions, information about frequency of topical application, duration of treatment and site of application was adequate.

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Table 1: Topical monotherapy and polytherapy treatment in patients of Allergic Contact dermatitis. Total number of patients: 209 (Two hundred nine).

DRUGS	MALE				FEMALE				TOTAL	
	MONO		POLY		MONO		POLY		N	%
	N	%	N	%	N	%	N	%		
Clobetasone butyrate (0.05%)	45	21.53	-	-	40	19.14	-	-	85	40.67
Clobetasol propionate (0.05%)	17	8.13	-	-	19	9.09	-	-	36	17.22
Betamethasone (0.05%)	10	4.79	-	-	10	4.79	-	-	20	9.58
Ketoconazole (2%)	5	2.39	-	-	10	4.79	-	-	15	7.18
Betamethasone valerate (0.1%) Fusidic acid (2%)	-	-	28	13.39	-	-	25	11.96	53	25.35
									209	100

Table 1

MONO=Monotherapy, POLY=Polytherapy, N=Number of patients, %=Percentage of patients  
On running unpaired t - test between males and females being treated with monotherapy we get

T score	0.0439
95% CI of difference	-28.3767 to 27.3767

And df- 6 and p value is >.05. While on running a chi square test we get

Treatment	Male	Female
Mono	77	79
Poly	28	25

Chi-square	0.0771
DF	1
Significance level	P = 0.7813
Contingency coefficient	0.0192

Again the p value is >.05

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Table 2: Systemic monotherapy and polytherapy treatment in patients of Allergic contact dermatitis. Total number of patients: 209 (Two hundred nine)

DRUGS	MALE				FEMALE				TOTAL	
	MONO		POLY		MONO		POLY		N	%
	N	%	N	%	N	%	N	%		
Levocetirizine (5mg)	4	1.91	-	-	3	1.43	-	-	7	3.34
Azithromycin (500mg)	16	7.66	-	-	20	9.57	-	-	36	17.23
Cefadroxil (250mg) Levocetirizine (5mg)	-	-	20	9.57	-	-	20	9.57	40	19.14
Prednisolone (5mg) Levocetirizine (5mg) Ranitidine (150mg)	-	-	65	31.10	-	-	61	29.19	126	60.29
									209	100

Table 2

MONO=Monotherapy, POLY=Polytherapy, N=Number of Patients, %=Percentage of patients, mg=milligram

On running an unpaired t test between males and females being administered monotherapy  
We get T-test (assuming equal variances)

<b>Difference</b>	<b>1.5000</b>
Standard Error	10.4043
95% CI of difference	-43.2662 to 46.2662
Test statistic t	0.144
Degrees of Freedom (DF)	2
Two-tailed probability	P = 0.8986

P value is again >.05 again we can go for unpaired t test for patients on polytherapy males and females.

<b>Difference</b>	<b>-2.0000</b>
Standard Error	30.4385
95% CI of difference	-132.9661 to 128.9661
Test statistic t	-0.0657
Degrees of Freedom (DF)	2
Two-tailed probability	P = 0.9536

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While on running a chi square for patients being treated by monotherapy and polytherapy, we get:

Treatment	Male	Female
Mono	20	23
Poly	85	81

<b>Chi-square</b>	<b>0.142</b>
DF	1
Significance level	P = 0.7058

This result again says that there is no statistically significant association between males and females being treated by monotherapy and polytherapy as  $p > 0.05$ .

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