

# DIETHYL CARBAMAZINE IN ALLERGIC RHINITIS

## ( A DOUBLE BLIND STUDY )

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### ABSTRACT

**Diethyl carbamazine (DEC) essentially an antifilarial drug has been shown to be useful in allergic rhinitis in a double blind study.**

#### Introduction

A new indication has been found for diethyl carbamazine a familiar antifilarial drug. It is shown that, apart from its antifilarial activity, the drug has been useful in the management of bronchial asthma in a double blind study, comparing the drug with a standard antiasthmatic preparation (Thiruvengadam *et al.*, 1974<sup>1</sup>).

It is likely that it is a blocking agent of mediator release (Ishizaka *et al.*, 1971<sup>2</sup>), in particular of SRS-A, from the sensitized basophil or mast cell. In 1979 Thiruvengadam and others presented their finding at a conference (unpublished) that DEC suppresses dermographism. It is also capable of decreasing wheal size diameter in endermal tests in allergy testing as effectively as an antihistaminic, but does not abolish histamine induced whealing (unpublished observations). Preliminary studies indicate that it may also be useful in Urticaria. Its use in allergic rhinitis is now reported.

#### Material and Methods

In a double blind study, 50 adult patients with a mean age of 26.2 (Range 13-46) having allergic rhinitis were randomly allocated to two regimens, DEC and placebo (25 in each group).

Patients with a history of allergic rhinitis for a period of atleast six months were chosen for the study. The clinical presentation was graded on a scale of 10 (Table 1) and only those who had an initial score of seven were admitted to the study. Both groups were comparable with respect to age, sex, the severity and duration of the illness and modalities of therapy, they had received.

**TABLE—1**

**SCORE OF CLINICAL PRESENTATION**

Criteria	Points
History (sneezing, stuffiness, rhinorrhea, headache combinations two or more of the symptoms)	4
Endermal test response to specific allergen	3
Nasal provocation test	2
Nasal smear for eosinophilia	1

The DEC group received the drug in a dosage of 5 mg/kg/day for 15 days; the drug was powdered and dispensed in gelatin capsules. The placebo group received lactose, in similar capsules.

The clinical assessment of both groups was done by a single independent observer who was unaware of the nature of the treatment.

Improvement was graded and recorded as good if there was a shift of four or more points in the score after treatment, fair if the shift was greater than 2.1 but less than four and poor if the change was 2.1 or less (Table 2).

**TABLE—2**

**GRADING OF RESPONSE TO THERAPY**

Grade	Shift of Points
Good	$\geq 4$
Fair	$>2.1$ but $<4$
Poor	$\leq 2.1$

**Results**

The results of the study are shown in Tables 3 and 4. It is seen that the DEC group showed a better response to therapy at the end of 15 days (Table 3).

**TABLE—3**  
**RESPONSE TO THERAPY**

Group	Good	Fair	Poor	Total Patients
Diethyl Carbamazine	16	3	6	25
Placebo	6	9	10	25
<b>Total</b>	<b>22</b>	<b>12</b>	<b>16</b>	<b>50</b>

When the pre and post treatment scores in the two groups were compared there was a significant difference  $p < 0.05$  between the two, with the DEC group having a lower post treatment score suggesting a better response to the drug (Table 4).

**TABLE—4**  
**COMPARISON OF PRE AND POST TREATMENT SCORES**

Group	Treatment Scores*	
	Pre	Post
Diethyl Carbamazine	7.7	4.08
Placebo	7.9	5.44

\*Difference Significant ( $p < 0.05$ )

**Discussion**

The management of allergic rhinitis, especially in developing countries is difficult, due to the paucity of technology to identify allergens and to monitor

immunological parameters; immunotherapy regimens are not feasible in all cases. Therefore, one has to rely on the pharmacological therapy.

Further, the commonly used agents, viz. antihistaminics are not effective unless used in large doses when side effects, such as drowsiness, may interfere with routine activities of patients. DEC is remarkably free of side effects when employed in the dosage used in this study. This drug has been used over long periods of time with no apparent ill effects (including haemopoietic). In addition, it could be effectively combined with conventional antihistaminics employed in the management of this disorder. The dose and frequency of administration of the latter may also be reduced.

It is believed by the present group that this is the first report on the effective therapeutic use of DEC in allergic rhinitis and would like to add that further studies to define the mode of action of this drug are in progress at the Asthma and Allergy Clinic, Government General Hospital, Madras.

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