Discussion
DISCUSSION

The study comprises of evaluation of the comparison of the older and newer group of Antiallergic including oral and topical in 68 cases of allergic rhinitis attending E.N.T. OPD from July 2003 to September 2004.

AGE

Table - I

In this study most of the patients suffering from allergic rhinitis were in the age group of 10-30 years i.e. 45 cases (66.18%). This observation is in accordance with that of Negus (1955) hagy (1969) Lindquist et al (1986). The youngest patient was 13 years old and oldest 53 years of age. Most recent epidemiological studies clearly support this fact with data of a twofold or sometimes even threefold increase within the last decade (19-21). Prevalance figures between 1.3% and 52% in children have been recorded in different studies, meanwhile, other reports of older age groups described figures of 26% and 29% prevalence. This wide variation draws attention to the fact that allergy is the conjunction of hereditary predisposition and risk factors encountered in the environment. (Passali, Mosges et al., Consensus Conference of Allergic rhinitis in child hood).

SEX

Table - II

In the present study, allergic rhinitis was found to occur more in males as compared to females. Negus (1955) observed, both sexes were equally affected. The low incidence in female may be due to the fact that in our country; females are less exposed to outside atmospheric inhalants, allergens and temperature variations as they usually stay at home. but now this trend is gradually changed.
**TYPE OF ALLERGY**

**Table - III**

In our study in Bundelkhand region the perennial allergy is most common. The region could not be detected whether it is due to fungal, mite or any other cause because study was based on history. The seasonal allergic rhinitis was found mainly in winter season.

In Bundelkhand region the main allergen is parthenium pollen. The peculiarity of this pollen is that it occurs in large clump. Suba Rao et al., have work intensively on a Parthenium pollen and showed that reaginic allergy to this highly prevalent pollen was common in Bangalore and Karnataka in general. Shivpuri and his colleagues in Delhi and Kabliwal in Jaipur were the pioneers in the work on allergy. Shivpuri's group established that Helianthus, Amaranthus, cassia, Cenchrus, Morus, Imperata and other pollen were allergen.

**OCCUPATION**

**Table - IV**

In the present study incident of allergic rhinitis in relation to occupation revealed that house wives, office workers and students were the commonest sufferers. It is probable that these people are subjected to emotional stress, family troubles, examination worries and work load.

Wilson, 1955 said that allergic manifestations were most often seen in intellectuals or at least sophisticated people. The number of factory workers and labourers who are more exposed to inhalant allergens like dust etc. was less in this series. This is possible due to the fact they are unable to keep away from their work and attend the hospital regularly, so were not selected for study.
Physical allergy cases constituted the major group (51.02%) in the series. Most of patients were found to be sensitive to change in atmospheric temperature and cold. This high incidence of physical allergy demonstrates the importance of physical agents in the production of hypersensitivity symptoms. This factors has been stressed by Rose, (1940) and Henry Williams, (1944). Very recent data suggest that pre-exposure to a combination of nitrogen dioxide and ozone may amplify subsequent pollen-induced immediate symptoms of rhinitis (Rusnak et al., 1994).

In our study, in food allergy the most common allergy found with citrus fruits, milk, egg, curd & cashew nut. The pollen cross-reacting food contain proteins sharing epitopes with the pollen, these proteins are glycoproteins being heat and acid stable and thus not degraded in the stomach. Some patients were allergy to drug like aspirin and sulphonamide.

Every cell reacts with change in environment but the person who are allergic, they have more tendency to react with environment change like change in weather.

The smoke & Fumes probably act by following ways:

- It directly irritate the nasal mucosa.
- It causes ciliary damage & diminish ciliary movement.
- It disturb the sol and gel layer of mucous.
FAMILY HISTORY

Table VI

In the present study a positive family was obtained in 41.17% cases. James (1952) noticed such a hereditary factors in 50% of allergic rhinitis patients. Where as Gill, (1966) observed a positive family history was present in 46% case of allergic rhinitis the low incidence in this series may be because of ignorance or forgetfulness of patients or case selection. Genetic analysis of DNA from family members implicated genetic linkage with a gene (or genes) on chromosome 11q (Cookson et al. 1989). An exciting recent development is the colocalization on chromosome 11q of the gene for the high affinity IgE receptor, disorders of which, at least in part, may contribute to the atopic trait (Sandford et al. 1993).

PSYCHOLOGICAL FACTOR

The importance of psychological factors in the production of nasal and post nasal catarrh has been stressed by Fowler, (1950) in the present study moderate number of cases were anxious and depressed. It may be due to the disturbance in the balance of sympathetic, parasympathetic and Autakoid discharge.

SYMPTOMATOLOGY

Table IX – X - XI

In the present study classical symptoms of allergic rhinitis were, sneezing, (94.17%) discharge (64.70%) and nasal obstruction (75%) found amongst 68 cases in varying degree of severity. Among the other symptoms, recurrent attack of dull frontal headachem itching nose and eyes were the most important. Rinkel (1962) qualified recurrent headache as the most important neurological sign of allergy and itching as pathognomonic
sign. Lindquist et al (1986) studied 63 patients of allergic rhinitis and observed sneezing was the predominant feature (92.31%) followed by nasal obstruction 981.1% and Rhinorrhea (78%). The present study is in accordance with his observation.

**SIGNS**

**Table IX- X - XI - XII**

Shambough, (1945) stated that the typical allergic mucosa is pale and oedematous with increased secretion. He also found that in a typical case mucosa may be red and congested with tendency to dryness. The classical changes as stated by shambaugh were revealed in this series also. In the present study the nasal mucosa was pale bluish in (76.47%) cases. This observation is also in accordance with Bunnang et al, 1992.

The nasal discharge was mostly watery in most of the cases. 42 cases (61.76%) of allergic rhinitis had watery discharge. This observation is in accordance with that of Binder (1984).

**ASSOCIATED INFECTION**

Incidence of infection of nose and sinuses was found to be nil in this series. While Hanset (1942) who has also worked on this aspect of allergic process, stimulated that definite sinus infection is comparatively rare in nasal allergy. Where as shambough, (1945) observed that at least 70% of chronic sin infection and 90% nasal infection have an underlying allergic factor responsible for chronicity.

Raised eosinophils (>10%) in blood were found in 34 (69.38%) cases. Neil Weir stated that peripheral blood eosinophil count can give information about the size of the "shock organ". If nose is the only organ affected the eosinophil count will usually be within normally limits.
Each patient under gone either with older group of Anti allergic or newer group of anti allergic was subjected to nasal biopsy before the treatment. Histopathological picture in allergic rhinitis patients showed transitional multilayered hyperplastic epithelium, oedematous stroma, engorged blood vessels, eosinophil and mononuclear cell infiltration in most of the cases, depending on the stage at which patient reported for examination and treatment. These all findings are similar as described by successive workers, Hiranandani (1966), Weir (1967), Charles et al (1977), Bhargawa (1980), Lindquist (1986).

Post therapy biopsies of nasal mucosa revealed 73.33% (63.33% to 83.33%) improvement with older group of antihistaminic and 93.55% (90.32% to 96.79%) improvement with newer group of antihistaminic. Similar results were noted with budesonide by Pipkorm and Berge (1981), Lindquist et al (1986), Pipkora (1988). After topical treatment with Budesonide, significant decrease in no. of eosinophil has been observed. This is same as was noted by Klemi et al (1980).

In this series of 68 cases, only 61 patients received topical treatment and followed up regularly therefore only 61 patients were considered for assessment. Clinical and histopathological trial was conducted with two group of drugs used topically over nasal mucosa in 61 patients of allergic rhinitis. These drugs were older and newer. In this present study 30 patients were treated with older and 31 patients with newer drugs.

About (75%) of the patients of allergic rhinitis treated of older topical nasal drops had either total relief from their symptoms or had fair amount of relief from their symptoms.
About (93.56%) patient of allergic rhinitis treated with newer topically, had either total relief from their symptoms or felt a fair amount of relief from their symptoms.

**TOPIAL TREATMENT WITH DECONGESTANT**

With older topical drugs in allergic rhinitis nearly 2/3rd (73.33%) of patients under trial got significant amount of symptomatic relief very soon but 4 patients complained of rebound swelling. This finding suggests that nasal decongested relieves symptoms of allergic rhinitis rapidly and effectively but prolong use of it in the nose may lead to condition called rhinitis medicamentosa. Similar finding with xylometazoline has been reported by Petruson (1981), Fleece (1984), Akerland et al (1991), Graf et al (1994).

Despite of having slight over use and dose related side effect of rebound swelling or nasal stuffiness with xylometazoline, large number of patients (76.47%) got symptomatic relief with xylometazoline nasal drops or efcorlin. These clinical findings are in according in that of P.Graf and J.Juto (1994).

**TOPIAL TREATMENT WITH NEWER ANTI - ALLERGIC**

In this present study of 31 cases of allergic rhinitis, were treated by newer topical drugs like budesonide, fluticasone and beclomethasone about (94%) patients of allergic rhinitis had either total relief from their symptoms or had a fair amount of relief from their symptoms.

Lindquist et al (1986) treated 63 patients of allergic rhinitis with budesonide. Our results as compared to his in the management of allergic rhinitis are nearly same.
<table>
<thead>
<tr>
<th>Symptoms relieved</th>
<th>Good response</th>
<th>Fair response</th>
<th>Poor response</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sneezing</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lindquist et al</td>
<td>72%</td>
<td>28.0%</td>
<td>-</td>
</tr>
<tr>
<td>Present study</td>
<td>76.92%</td>
<td>19.23%</td>
<td>3.84%</td>
</tr>
<tr>
<td><strong>Nasal obstruction</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lindquist et al</td>
<td>61.0%</td>
<td>31.0%</td>
<td>8.0%</td>
</tr>
<tr>
<td>Present study</td>
<td>85.71%</td>
<td>14.28%</td>
<td>-</td>
</tr>
<tr>
<td><strong>Rhinorrhoea</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lindquist et al</td>
<td>49.0%</td>
<td>43.0%</td>
<td>8.0%</td>
</tr>
<tr>
<td>Present study</td>
<td>70%</td>
<td>25%</td>
<td>5%</td>
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</tbody>
</table>

Bunnang et al. (1992) also reported their experience with Budesonide topically in the management of 33 cases of allergic rhinitis. The results of this study as compared to their study are follows:

<table>
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<tbody>
<tr>
<td><strong>Nasal obstruction</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lindquist et al</td>
<td>68%</td>
<td>28%</td>
<td>4%</td>
</tr>
<tr>
<td>Present study</td>
<td>85.71%</td>
<td>14.29%</td>
<td>-</td>
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<tr>
<td><strong>Rhinorrhoea</strong></td>
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<td>70%</td>
<td>25%</td>
<td>5%</td>
</tr>
<tr>
<td>Present study</td>
<td>66.67%</td>
<td>27.78%</td>
<td>5.55%</td>
</tr>
</tbody>
</table>

Wight et al (1992) managed 59 patients of allergic rhinitis with budesonide 400 micrograms and 800 micrograms topically per day. He observed more or less same benefit in the patients with either dose of
budesonide and no increase in adverse effects occurred with higher dose therapy.

**Mc. Arthur** (1995) carried out a comparative study budesonide and beclomethasone sprays in 88 adults with allergic rhinitis. In this study the results with Budesonide were good improvement in 69% of cases, fair in 22% of cases and there was poor improvement in 9% of cases.

To observation of the results of present study with Budesonide is similar to that of the other workers. A slight difference in the results may be attributed to the variation in number of patients under trial.

**AU Lindqvist N. Balle VH Karma P. Karja. Lindstrom D. Makien J. Pukander J. Ruoppi P. Suonppa J. Ostlund W. et al. 1986 Apr.** The long term safety and efficacy of budesonide nasal aerosol in perennial rhinitis. A 12 month multi centre study. Has been performed 104 patients with perennial rhinitis. The analysis revealed no histopathological change of the nasal mucosa. All nasal symptoms parameters assessed by the patient were significantly reduced from baseline during the follow-up of period. ACTH revealed no influence on the hypothalamic pituitary adrenal axis.

**Otolaryngology – Head & Neck Surgery. 118 (5) 648-54, 1998 May.** The tissue change associated with mometasone furoate use (200 microg/day) during a 12 month treatment period in patient with perennial rhinitis. Morphological examination of nasal biopsy specimens showed a decrease in focal metaplasia, no change in epithelial thickness, and no sign of atrophy after treatment. Immunocytochemical analysis of nasal biopsy specimens obtained before and after treatment revealed a significant decreased in major basic protein positive eosinophils and tryptase-positive mast cells in the epithelium and lamina propria after treatment and attenuate the inflammatory process by reducing the extend of inflammatory cells.
TI Assessment by nasal biopsy of long-term use of mometasone furoate aqueous.

No recurrence in the symptoms of allergic rhinitis treated with Budesonide was noticed during the follow-up period.

In the present study of allergic rhinitis cases we got more successful results with newer group of antiallergic drug (oral drug – levocetirizine, fexofenadine, ebastine) budesonide, Fluticasone and Beclomethasone (95.24%) when compared to (72.47%) in cases of xylometazoline, Naphazoline & Hydrocortisone topical spray. More-ever, there were almost no any side effects like rebound swelling or recurrence reported with Budesonide therapy, however the possibility of overuse related rebound Swelling, should be kept in mind before prescribing decongestant xylometazoline topically in allergic rhinitis patients. A Clear-Cut clinical efficacy evaluation can not be made in the present study as no control group was available. However, almost all the initially enrolled patients felt such benefit that they continued the given treatment. Another interesting observation was that there was no spontaneous increase in dosage. On the contrary several of the patients decreased their dosage and could still be free from nasal symptoms.