

Fexofenadine: Prophylactic Treatment in Allergic Rhinitis

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Summary: Allergic rhinitis is commonly found in Kashmir. Prophylactic Fexofenadine shows more promising activity with mild side effects at proper dosage schedule. 10 cases of Allergic Rhinitis were studied during a period from Jan 2013 to July 2015. Clinical symptomatology of Allergic rhinitis are described as recurrent, episodic profuse mucoid nasal discharge, excessive sneezing and nasal obstruction. The associated symptoms being itching and burning sensation of conjunctiva, nasal mucosa and Oropharynx and the aggravation of the symptoms coincident with the pollination. The prophylactic treatment with Fexofenadine 120 mg once daily for 3 weeks with 1 week drug wash-out interval in a month has proven very effective in preventing the acute attack of allergic rhinitis. The drug has been tried for such a prolonged time and is virtually free of side effects and toxicity (clinically) on such dosage.

I. Introduction

Allergic rhinitis is commonly found in Kashmir. Generally found in Atopic individuals, it implies a familial tendency to manifest alone or in combination of such conditions like, Asthma, urticarial and eczematous dermatitis (1, 2). Individuals without familial tendency can also develop hypersensitive reactions, associated with same class of Antibody (IgE) (3). Thus designates the diseases of immediate type of hypersensitivity. H1-Antagonist have been widely used for the treatment of rhinitis for nearly 50 years(4, 5). Prophylactic Fexofenadine, a non-sedating, highly selective antagonist shows more promising activity with mild side effects at proper dosage schedule (6-10). This paper reports the results of a clinical trial of Fexofenadine as prophylactic treatment in allergic rhinitis.

II. Materials And Methods

10 Patients (7 males and 3 females) were followed for one and half year. Each patient has a routine clinical evaluation and investigation like CBC, TLC, DLC, Stool test, ECG all leads (11), X-ray PNS view, in few NCCT PNS, Trans-illumination test and procedures like Antral proof puncture and postural test (12, 13). Majority of the patients were adults and the age varied between 18 to 30 years.

The patients presented with nasal discharge/obstruction, sneezing (10 or more times at a time) facial/referred pains, itching of nose, eyes, palate and pharynx were kept in the category of patients suffering from Seasonal Allergic Rhinitis (so noted on history about particular month) (14-16). These subjects were advised to take the drug 120 mg once daily in the morning before the initial noted symptoms along with all preventive measures for the whole season.

The patients presented with Perennial Allergic Rhinitis were subjected to take the drug 120 mg at bed time i.e. 24 hourly for 3 weeks with 1 week drug washout interval in a month for one year there after the drug was given at 48 hourly for 3 weeks again with 1 week drug washout for 3 months and with time the dose were reduced to 60 mg at 72 hrly (17).

Observation:

Table 1: Symptomatology of the group

Symptoms	No. of cases
Nasal obstruction(functional/ mechanical)	10

Rhinorrhea /discharge.	9
Sneezing.	7
Redness/lacrimation of eyes.	4
Urticaria/angioedema/asthma.	2

The Table 1 shows nasal obstruction (functional) in almost 100% cases, rhinorrhea in 90% of cases, sneezing in 70% and chronic sinusitis symptoms in 30-60% of cases. The characteristic episodic mucoid secretion followed by muco-purulent discharge resulted in chronic sinusitis especially of maxillary sinus. Hypertrophy of the turbinate's and obstruction of the Sinus Ostia and Eustachian tubes precipitates secondary infections of the sinus and middle ear. It has been observed that patients suffering from allergic rhinitis gets recurrent bacterial infection thus relieves them for a period probably due to Eosinopenia (18). At the same time muco-purulent discharge coats the nasal mucosa and prevents the allergen to come in to contact with mucosa. The affected persons uncommonly suffers from Rhino-viral infection reasons seemed to me increased temperature of the nasal mucosa (Rhino virus grows at 33-34 centigrade temperature and at a PH greater or equal to3) (3, 19, 20).

It has been observed that acute illness are not controlled by 2nd generation, non-sedating antagonists(21). Out of 10 cases, 4 were having seasonal allergic rhinitis who were symptomatically better after prophylactic Fexofenadine 120 mg once daily were given as per dates of pollination.

Out of 6 cases of Perennial allergic rhinitis 1 patient underwent Septoplasty, 1 patient underwent polypectomy, 1 was in need of repeated antral washes of maxillary sinus, 3 patients presents with recurrent chronic on acute-sinusitis. They were given prophylactic treatment with Fexofenadine with the results shown in Table 2.

Table 2:

PAR with	Symptoms relieved
Chronic on acute sinusitis.	95%
Post-operation, Septoplasty polypectomy	80%
Following Antral washes.	65%

Most of the side-effects goes off with time, as shown in table no 3. Therefore the drug were useful in prophylactic therapy.

Table no. 3 shows the clinically noted side-effects of the drug.

Side Effects	No. of cases
Headache	8.
G.I. upset(loose motion)	6.
Rebound nasal congestion	5.
Dryness of nasal mucosa	3.
Dryness of mucosa of pharynx	2.
Polymorphic ventricular tachycardia	Nil

Discussion

H1-Receptor antagonists, widely used for the last 50 years were introduced in the late 1930's (22). Fexofenadine, one of the most selective H1-antagonist, non-sedative having no H2, anti 5-HT or anti adrenergic properties.

Antagonist	Max(hrs):	T 1/2:	Wheal suppression (hrs.) (23)
Fexofenadine	1.0	11-16 hrs	12-24 hrs.

It is well-absorbed from G.I.T, excretion occurs equally in urine and feces. Since it's minimally metabolized no interaction with CYP₃A4 inhibition has be reported (24).Its largely free of arrhythmogenic potential, but with pre-existing long QT interval patients medicine shall be given with caution (25). Fexofenadine exerts maximal benefit if taken before an anticipated allergic reaction, so that the antagonist may occupy the receptors before the agonist (histamine) is released (20). The dosage has been selected and adjusted from time to time as drug gets accumulated in the body, thus requires wash-out intervals. The dose of 120 mg daily has been recommended (FDA).We select dose 120 mg 24 hrly i.e. from 8 am. to 8 am initially to be continued for 3 weeks with an interval of 1 week free drug (20). As patients were symptomatically better the drug were given at 48 hrly with wash-out interval of 1 week and with time the dose were reduced to 60 mg at 72

hrly. It is observed that with age the intensity of the allergic manifestation diminishes (3). Experiments have demonstrated that Fexofenadine from 0.20-5 μ mol/L had no significant effect; While as parent Terfenadine 1 μ mol/L markedly reduces the potassium currents (IK) in ventricular myocytes (26), causes excessive delay in cardiac repolarization leads to a condition Torsades de pointes (27-30). Above all, every patient were questioned after every week for any disturbances, headaches, palpitations, dizziness, shortness of breath or any G.I. upset etc. Every patient were advised not to take medicines without consultation especially Antibiotics, Antifungals etc. Thereby Fexofenadine monotherapy were well tolerated in our patients. And the side-effects observed were mild and transitory. The drug may be considered very useful in the treatment of Allergic Rhinitis i.e. PROPHYLACTICALLY.

Conflict of interest

It is certified that there was not any conflict of interest.

Competing Interests

The authors declare that there were no competing interests.

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