Beta Blocker Eye Drops related Airway Obstruction

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Abstract

Objective: To assess the awareness among chest physicians, opthalmologists and patients about use of eye drops with particular reference to beta blockers such as timolol as an agent of aggravating breathlessness in predisposed subjects.
Design: Cross-sectional study.
Method: A survey of 20 chest physicians, 20 opthalmologists and 200 patients suffering from obstructive airway disease was conducted in 2 hospitals and a welfare center of Karachi from August to September 1997. Results: The results indicate that opthalmologists showed more awareness than chest physicians regarding use of beta blocker eye drops by patients with obstructive airways disease (p=0.004). Patient awareness was low as well.
Conclusion: There is a need to update doctors and educate general public about the side effects of beta blocker eye drops in patients with obstructive airway disease (JPMA 51:202;2001).

Introduction

Bronchial asthma is seen as a very common disorder in the practice of pulmonary medicine. The patient suffering from this calamity is often not aware that certain eye drops (such as beta blockers generally used to treat glaucoma) can initiate the wheezing spell if predisposed[1-3]. Many times these patients report to physicians the detail list of current medications but fail to mention the use of eye drops. Physicians are either not aware or do not have time to ask specific questions regarding the use of beta blocker eye drops use. As a result, patients with obstructive lung disease who use beta blocker eye drops continue to wheeze despite effective therapy for breathlessness[4,5].

Many studies have reported about the degree of dyspnea caused by beta blocker eye drops[6,7]. Even specific beta-i blocker eye drops such as betaxolol cause ,a substantial decrease in FEV I (Forced expiratory volume in one second)[8-10].

The objective of the study was to assess the awareness of this problem. so that appropriate recommendations can be made to raise the awareness among clinicians and patients.

Patients and Methods

The subjects from three groups of population were selected. First, a survey of 200 consecutive patients (112 males and 88 females), with age greater than 1 5 years. presenting to the pulmonary clinic of three different institutions (Aga Khan University Hospital, Ziauddin Medical University Hospital and Edhi Welfare Centre) was conducted from August to September 1997. Only patients diagnosed as Chronic Obstructive Airway Disease (COPD) or asthma were interviewed as they were leaving the clinic. They were asked about the use of eye drops within the last six months, whether their doctor knew about it and the name of the eye drops if any. Data regarding age, sex, and diagnosis were obtained by reviewing patients' medical records.

To assess awareness among chest physicians regarding beta blocker eye drops as a potential agent of aggravating breathlessness in predisposed patients, twenty chest physicians working in the Aga Khan University Hospital, Ziauddin Medical University Hospital and Edhi Welfare Centre were interviewed

during the above mentioned time period. Only those who, on an average cared for at least fifty asthmatics per month were included as a part of this survey. The physicians were asked that out of all the patients suffering from breathlessness, what percentage do they ask of using eye drops and how many people have they so far seen who have developed wheezing precipitated by beta blocker eye drops?
Similarly, twenty ophthalmologists wOrking in the Aga Khan University Hospital, Ziauddin Medical University Hospital and Spencer Eye Hospital (and caring for at least fifty patients of glaucoma per month) were asked that of all the patients to whom they prescribe beta blocker eye drops, what percentage do they ask of suffering from breathlessness and how many people have they so far seen who have developed wheezing precipitated by beta blocker eye drops?
Chi square test was used to assess the difference in awareness between chest physicians and ophthalmologists 'regarding use of eye drops by patients with obstructive airway disease.

Results

The survey of 200 patients interviewed showed that 46 of them (23%) were using any kind of eye drops. The chest physician knew about the use of eye drops in 9 (19.5%) of these patients. The most commonly use eye drops were topical corticosteroids, followed by antibiotics and beta blockers.

Table 1. Percentage of patients inquired by chest physicians and opthalmologists regarding use of eye drops and breathlessness respectively.

% of patients asked by the consultant in the concerned out patient department	1-5	6-10	11-30	31-50	51-70	>70
# of chest physicians inquiring about use of eye drops in patients with breathlessness (n=20)	12	3	3	0	0	2
# of ophthalmogists inquiring about breathlessness in patients using eye drops (n=20)	3	2	2	3	2	8

Table 2. Number of patients seen by chest physicians and ophthalmologists with wheezing precipitated by beta blocker eye drops.

# of patients seen wheezing precipitated by beta blocker eye drops	0	1	2	3	4	5	10
# of chest physicians (n=20)	16	1	1	0	1	1	0
# of ophthalmologists (n=20)	15	2	1	1	0	0	1

As shown in Tables 1,2 ophthalmologists inquired more frequently about the history of breathlessness from patients than chest physicians about the use of beta blocker.
One of the patients recalled of having a feeling of chest congestion on using beta blocker eye drops. Another asthmatic with severe breathlessness was found using beta blocker eye drops. The chest physician requested the ophthalmologist to immediately discontinue the offending eye drops. A few days later that patients returned with persistent breathlessness. When asked about the use of eye drops, the patient showed a prescription with a different brand of beta blocker.
Inamizu reported a 65-year-old lady with stable atopic bronchial asthma who received a prescription for timolol mealeate eye drops (0.25% solution, one drop twice a day to both eyes) for glaucoma. Ten minutes after the first application of Timolol. an attack was precipitated, resulting eye drops in patients with breathless. (p0.004).

Discussion

Timolol is a short acting, potent, non-selective beta receptor antagonist. It is available as 0.25% and 0.5% ophthalmic solution (Timoptic). Initial dose of one drop twice daily of 0.25% tirnolol is used for open angle glaucoma. If response is inadequate, the dose can be increased to two drops twice daily. Major local side effects are unusual. However. systemic side effects such as breathlessness can be profound with smallest of the doses in susceptible patients- the reason for this being the extensive absorption of the ocular formulation.

Asthmatics frequently ask what could they do to get rid of their disease. It is very rewarding to find an offending agent like household pet or avoidable environmental allergies. Use of beta blocker is Often not mentioned by the patients when they list current medications to their clinician. When asked whether the chest physician knows about his eye drops use, one of the patients said that the doctor never asked about it. Another answered that he did not feel it necessary to tell the doctor about his eye drops use in unconciousness and other complications[11,12].

Few chest physicians and ophthalmologists ask every patient prescribed for breathlessness and use of eye drops (with reference to beta blocker eye drops). Most cite lack of time and large number of patients, as reasons for not probing the details regarding use of eye drops.

Although this survey sample was small, its results show a need for clinicians to be more cautious about this issue[13]. A greater effort is therefore needed to educate physicians and patients. One way to achieve this is by designing a form, which contain this vital question to be filled out on each patient while taking the history. Such a format was in eye clinic of one of the institutions involved in the study.

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