Topical TIMOLOL side effects (patient's awareness, prevention), prescription, and pretreatment assessment.

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Abstract

The aim of this study was to estimate topical TIMOLOL side effects (patient's awareness, prevention), prescription, and pretreatment assessment. In this study we interviewed five hundred (500) patients with open angle glaucoma, who attended the ophthalmology department -in Tikrit Teaching Hospital- for checking, at the period [June 2008- April 2009]. Direct interview questions were used to assess patients knowledge about (TIMOLOL) side effects and whether they received enough medical advices by their ophthalmologists or not. Also we determined the degree of cooperation between ophthalmologists and medical physicians regarding pretreatment assessment. Also we tried to answer an important question, who prescribed antiglaucoma drug (TIMOLOL)? The results showed that 97% of interviewed patients didn’t have complete informations about (TIMOLOL) side effects, while only 3% have these informations. also 90% of patients didn’t know how they prevent systemic complications, by reducing systemic absorption. Only 83% of estimated patients received their treatment from senior ophthalmologists, 10% from permanent ophthalmologist, and 7% from general practitioner (GP). Weak cooperation between the ophthalmologists and medical physicians were detected, where only 5% of patients sent for medical consultation before starting the treatment. - Most of included patients with glaucoma didn’t have enough awareness of systemic side effects of topical (TIMOLOL), which may affect their general health. The perfect way to reduce the risk of systemic absorption of topical (TIMOLOL) not explained well for most of patients. Critical fact was discovered, topical (TIMOLOL) was prescribed for about 17% of patients by non-specialized ophthalmologists. Weak cooperation between the ophthalmologist and medical physicians have been detected (95% of patients didn’t receive medical consultation before starting TIMOLOL therapy).

Introduction

Primary open angle glaucoma is a condition associated with an elevated intraocular pressure (IOP) that is defined as optic nerve degeneration of the visual field that may lead to blindness.(1-2) Glaucoma has its highest prevalence among the elderly population, with an incidence of approximately 1% in those older than 60 years, 3% in those between the age of 70 and 80 years, and more than 9% in those older than 80 years. Treatment is directed at lowering high intraocular pressure. The initial treatment, in most of cases is topical therapy with a beta-adrenergic blocking agents (TIMOLOL), which reduces the intraocular pressure to help preserve sight. (4-5-6) Such topical agents may also have adverse systemic side effects on cardiac, pulmonary, central nervous system (CNS) and endocrine functions. (7-8) Topical (TIMOLOL) complications (side effects) include both ocular side effects and systemic complications. Ocular side effects include allergy and corneal epithelial erosions. (9) Systemic side effects include:

1-Cardiovascular side effects: bradycardia, aggravate congestive heart failure and hypotension.
2-Pulmonary side effects: bronchospasm and exacerbation of reactive airway diseases which possibly lead to respiratory arrest.
3-CNS side effects: depression, fatigue, weakness, confusion, memory loss, headache and anxiety.
4-Endocrine side effects: alteration of endocrine system in patients with diabetes, and may reduce the awareness of hypoglycemic crisis and produce a deterioration in glucose tolerance. (10-11-12-13)

Reduction of systemic drug absorption may be achieved by lacrimal occlusion following instillation or by closing the eye for 3 minutes.
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to reduce systemic absorption by about 50%.(14) The range of potentially serious adverse effects associated with topical (TIMOLOL), can pose considerable challenge to the physician in clinical practice. (15) Large number of ophthalmologists may miss patient awareness about the side effects of topical (TIMOLOL). (16) Our study was done to estimate patient awareness about topical (TIMOLOL) side effects and to determine whether the ophthalmologists explain to their patients these side effects or not.

**Patients and methods**

In this study we interviewed five hundred (500) patients with open angle glaucoma, who attended the ophthalmology department -in Tikrit Teaching Hospital- for checking, at the period [June 2008- April 2009]. Direct interview questions were used to assess patients knowledge about (TIMOLOL) side effects and whether they received enough medical advices by their ophthalmologists or not. Also we determined the degree of cooperation between ophthalmologists and medical physicians regarding pretreatment assessment. Also we tried to answer an important question, who prescribed antiglaucoma drug (TIMOLOL)?

**Result**

Five hundred (500) patients with open angle glaucoma were interviewed by direct questions in ophthalmology department for the period from June2008-April2009.

The estimation of patients with open angle glaucoma awareness about topical (TIMOLOL) side effects showed that 76% (380) of patients didn’t have any idea about systemic or local topical (TIMOLOL) side effects, while 21% (105) of patients were determine one to three of these side effects, and only 3% (15) have full informations about (TIMOLOL) side effects.

Figure (1) showed patients distribution according their ability to mention (TIMOLOL) side effects.

As an answer of a question “did the true method to reduce systemic (TIMOLOL) absorption have been explained for them well?” 90% (450) not received that explanation at all, 7% (35) received brief informations, and 3% (15) received full explanation.

Figure (2) determine the distribution of patients according to their knowledge of the true way to reduce systemic absorption of (TIMOLOL).

Critical fact was discovered when those patients answer the following question “who prescribe the drug (TIMOLOL) for you?”.83% (415) said by senior ophthalmologist, 10% (50) by permanent ophthalmologist, 7% (35) by general practitioners (GPs) and these informations represented well with figure (3).

**Discussion**

It has been recognized that potentially serious side events may occur from topical beta – blockers(17). Beta-blockers (TIMOLOL) have contributed to congestive heart failure and arrhythmia, adversely alter serum lipids, reduce exercises tolerance, and decrease nocturnal blood pressure. (17)

One of the most serious potential adverse effects of (TIMOLOL) is an exacerbation of reactive airway diseases, possibly leading to respiratory arrest. The precise mechanism is not known (18).

Fortunately, the ophthalmic community has long recognized the safety concerns involved in the use of topical (TIMOLOL) and new treatment options, with favorable adverse events profiles recently having become available. However, the remains a great need for increased awareness of the potential adverse effects (TIMOLOL), which is the main purpose of this study.

Figure (1) show that 76% (380) of estimated sample didn’t have any idea about (TIMOLOL) side effects, while 21% (105) patients have some informations about these side effects and only 3% (15) were fully informed.

High number of estimated patients (90%) didn’t have adequate informations about the true way of reducing systemic (TIMOLOL) absorption, and this high percentage can be reduced if the ophthalmologist spends more time in the learning of the patient the perfect way of reducing systemic absorption of the drug.
Figure (3), show that about 17% (85) of the sample received the drug depending on the prescription by non-specialized ophthalmologists (permanent ophthalmologists or general practitioners), and this carry high risks on the patient health.

Finally, the relation bond is so weak between the specialized ophthalmologists and medical physicians regarding pretreatment assessment, including assessing general health of the patient and exclusion of cardiac and respiratory illnesses.

**Conclusions**
- In this study, we tried to get useful answers about many important questions regarding the prescription and side effects of topical antiglaucoma drug (TIMOLOL).
- Also, we tried to estimate the level of patient awareness of these side effects and the true way to reduce the systemic side effects.
- The study showed that 76% of estimated patients with glaucoma didn’t have enough awareness about topical TIMOLOL systemic side effects and that put them under many risks. The perfect method to reduce systemic absorption wasn’t explained for most of them.
- Serious fact was discovered, topical (TIMOLOL) was prescribed for 7% of estimated sample by general practitioners and 10% by permanent ophthalmologists and this carry a high risk of drug misuse.
- The teamwork spirit was so weak between the ophthalmologists and medical physicians ((95% of estimated patients didn’t receive medical consultations before starting therapy)).

**Recommendations**
Ophthalmologists need to spend more time in the explanation of (TIMOLOL) side effects when prescribe it for patients with glaucoma and also teach them the perfect way to reduce systemic absorption.
TIMOLOL and other antiglaucoma drugs should be prescribed only by specialist ophthalmology to avoid drug misuse.
*Ophthalmologists and medical physicians should act as teamwork and all patients should receive full medical assessment before starting (TIMOLOL) therapy.

**References**
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**FIGURE (1):** the distribution of estimated sample according to their awareness of topical TIMOLOL side effects.
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**FIGURE (2):** Patients distribution according to their informations about the true method of reducing TIMOLOL systemic absorption.

**FIGURE (3):** Showed drug (TIMOLOL) prescription by specialist ophthalmology, permanent ophthalmology and general practitioners.
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**FIGURE (4):** Determine the degree of cooperation between the ophthalmologists and medical physicians, depending on the percentage rate of patients received pretreatment consultation.