Prevalence and Treatment of Glaucoma Disease in Tripoli Eye Hospital

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Abstract:

Background: Glaucoma is actually a group of eye diseases that damage the optic nerve, which can be lead to vision loss and possibly blindness.

Aim of the Study: The retrospective clinical study was undertaken to determine the most common types of glaucoma, age, sex incidence, diagnosis and treatment of glaucoma disease. **Subjects and Methods:** The information was collected randomly from 150 discharged patients included files (64 females and 86 male), with glaucoma disease admitted to Tripoli Eye Hospital (T.E.H) in Tripoli from 2001- 2003. The details of data present in the files were very carefully collected and were entered in the performa. The study included the most common types, age, sex incidence, methods of diagnosis and drugs used in the treatment of glaucoma disease.

Results: The findings indicate high incidence of glaucoma disease especially open angle glaucoma (49%, n=74). The common age incidence (61-80 years) (54%, n=81). The diagnosis and treatment of glaucoma in Tripoli Eye Hospital has been focusing particularly on the drop off intraocular pressure (1.0.P.) follow up of optic disc cupping and find out visual defect.

Conclusions: The findings reinforce the need for the clinical pharmacists to help physicians averting development of glaucoma 'disease.

Introduction:

Glaucoma is responsible for 10-15% of blindness worldwide.[1] It is defined as a progressive optic neuropathy with characteristic structural change in optic nerve head and functional changes in the visual filed.[1-3] It can occur at any age, but more common in people over ages of 40 years.[1,2] Glaucoma is traditionally classified as primary or secondary according to its cause and open or closed angles according to anatomical gonioscopic findings.[2] Therefore, four disease entities are identified: open angle glaucoma, closed angle glaucoma, lens induced glaucoma, and neovascular glaucoma. Prevalence of types of glaucoma in Tripoli Eye hospital is not available. In this study, we attempted to estimate the magnitude of the most prevalence glaucoma type.

Subjects and Methods:

The study was conducted in the period between 2001-2003. The information was collected randomly from 150 discharged patients files (64 females and 86 male), with glaucoma disease admitted to Tripoli Eye Hospital (T.E.H) in Tripoli from 2001-2003. The details of data present in the files were very carefully collected and were entered in the performa. The study included the most common types, age, sex incidence, methods of diagnosis and drugs used in the treatment of glaucoma disease.

Results:

Types of glaucoma:

The result indicates that open angle glaucoma is 49.3% of all patients (n=74) more common than other type of glaucoma followed by closed angle glaucoma 22% of all patients (n=33), lens induced glaucoma 12.6% of all patients (n=19), secondary glaucoma 5.3% of all patients (n=8), last congenital and juvenile less common than other type of glaucoma disease in our study (0.5 to 1.5%) of total patients, as illustrated in fig. l.

Sex distribution:

The sex distribution didn't vary widely in this study (males = 57%) as illustrated in fig. 2.

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Age distribution:
The result shows that the study is carried out on patients among one month to 90 years of the age. The majority age sub group for open angle glaucoma was 61-80 years having 55.4% (n=41) of all patients, then followed by the major age sub group for closed angle glaucoma was 41- 60 years having 54.5% (n=T8) of all patients, for lens induced glaucoma, the major age sub group 61-80 years having 84.2% (n=16) of all patients. For neovascular glaucoma, the major age sub group 61-80 years having 46.1% (n=6), for secondary glaucoma the major age sub group 61-80 years 50% *(n=4)* of all patients, and for both congenital and juvenile glaucoma, the major age sub group 0-20 years having 100% of patients. as illustrated in fig. 3.

Treatment history:
The result shows that the history of taking drug (medical) was more common 100% than surgical history 42.7% of all patients as general for all type of glaucoma disease. However, in lens induced glaucoma, congenital glaucoma, and juvenile glaucoma, the result shows surgical history was more common 100%. None of our patients had neither medical nor surgical treatment history, as illustrated in fig. 4.

Therapy of glaucoma disease:
The different drugs used in treatment of glaucoma disease were beta- blockers (timolol) in (143) patients 95.3% that were most common drug, miotic (29) patients 19.3%, carbonic anhydrase inhibitors (i.v. diamox) in (51) patients 43%, oral diamox in (49) patients 32.6% and trusopt in (22) patients 14.4%, and hyperosmotic agent (i.v. mannitol) in (45) patients 30%.
All patients with open angle glaucoma (n=74), lens induced glaucoma *(n=l9* secondary glaucoma (n=8), congenital glaucoma (n=2), and juvenile glaucoma (n=l) used beta-blocker drugs, 87.8% (n=33) patients with closed angle glaucoma used beta-blockers, and 76.9% (n=13) patients with neovascular glaucoma used beta-blocker drugs.
Miotic drug was used in (17%) of patients with closed angle glaucoma, (73.6%) of patients with lens induced glaucoma and (61%) of patients with neovascular glaucoma.
Intravenous diamox was used in (87.8%) of patients with closed angle glaucoma, (73.6%) of patients with lens induced glaucoma, and (61%) of patients with neovascular glaucoma.
Oral diamox was also used in (37.8%) of patients with open angle glaucoma, (12.1%) of patients with closed angle glaucoma, (26.3%) of patients with lens induced glaucoma, (23%) of patients with neovascular glaucoma, and (100%) of patients with secondary glaucoma.
Trusopt was used in (14.8%) of patient with open angle glaucoma, (9%) of patients with closed angle glaucoma, (7.6%) of patients with neovascular glaucoma, (75%) of patients with secondary glaucoma, and (50%) of patients with congenital glaucoma.
Hyperosmotic agent (e.g. mannitol) was used in (12.1%) of patients with open angle glaucoma, (21.2%) of patients with closed angle glaucoma, (100%) of patients with lens induced glaucoma, and (76.9%) of patients with neovascular glaucoma, as illustrated in fig. 5.

Discussion:
Glaucoma, once thought of as a single disease is actually a broad term for a certain pattern of damage to the optic nerve. This pattern usually occurs in the presence of high intraocular pressure, but contrary popular belief, glaucoma can occur with normal or even below normal eye pressure.[4] In the United States, about 300,000 new cases are diagnosed each year, adding to more than three million cases. Vision experts estimate that half of those affected may not know they have it because symptoms may not occur during the early stage of the disease. By the time, the patient notices something is wrong; the disease has already caused considerable damage.[5]
Medication and surgery can help show the progression of the disease, but there is no cure.[5]
The result indicates that open angle glaucoma (49.3% of all patients n=74) is the most common type of glaucoma followed by closed angle glaucoma 22% of all patients (n=33), lens induced glaucoma 12.6% of all patients (n=19), secondary glaucoma 5.3% of all patients (n=8), whereas congenital and juvenile are the least common (0.5-1.5%). With respect to age, open angle glaucoma is the most common from of the glaucoma and is found predominantly amongst patients between 61-80 years of age, closed angle glaucoma is found in age group 41-60 years of age group, lens induced glaucoma is found in age group 61-80 years, neovascular glaucoma is found in age group 61-80 years, secondary glaucoma is found in age group 61-80 years, and congenital and juvenile glaucoma both of them are found

in age group between 1-20 years. Sex distribution shows males incidence are more than females to any type of glaucoma disease. Our findings are in agreement with previous information reports.[6] This could be possibly due to either risk to the males or more frequent medical care utilization by them. However, it is postulated that the future investigations should pay proper attention to reveal the true nature of the situation.

Concerning symptoms, open angle glaucoma is usually asymptomatic, the intraocular pressure slowly increases over several years or more. The symptoms are shown usually in closed angle glaucoma, lens induced glaucoma, and neovascular glaucoma, that is mainly related to sudden increase in intraocular pressure and rapidity with which it occur. Concerning to the open angle glaucoma is commonly treated medically, but in closed angle glaucoma, lens induced glaucoma, and neovascular glaucoma usually treated with surgical treatment. Where 100% of cases gave, a history of medical treatment, while 64% had a surgical history and no history of treatment were 0%.

The surgical history 100% in patients with neovascular glaucoma, closed angle glaucoma, and lens induced glaucoma. The treatment of glaucoma disease comprises the use of beta-blocker drugs 95.3%, miotic drugs 19.3%, carbonic anhydrase inhibitors (I.V. diamox 43%, oral diamox 32.6%, and trusopt 14.6%), and hyperosmotic agents 30% of the total cases.

Conclusions: Open-angle glaucoma is the most common type of glaucoma. Closed angle glaucoma, lens induced glaucoma, and neovascular glaucoma are the second most common type of glaucoma. Open angle glaucoma is commonly treated medically but closed-angle glaucoma, lens induced glaucoma and neovascular glaucoma are usually treated with surgery. The findings reinforce the need for the clinical pharmacists to help physicians averting development of glaucoma disease.

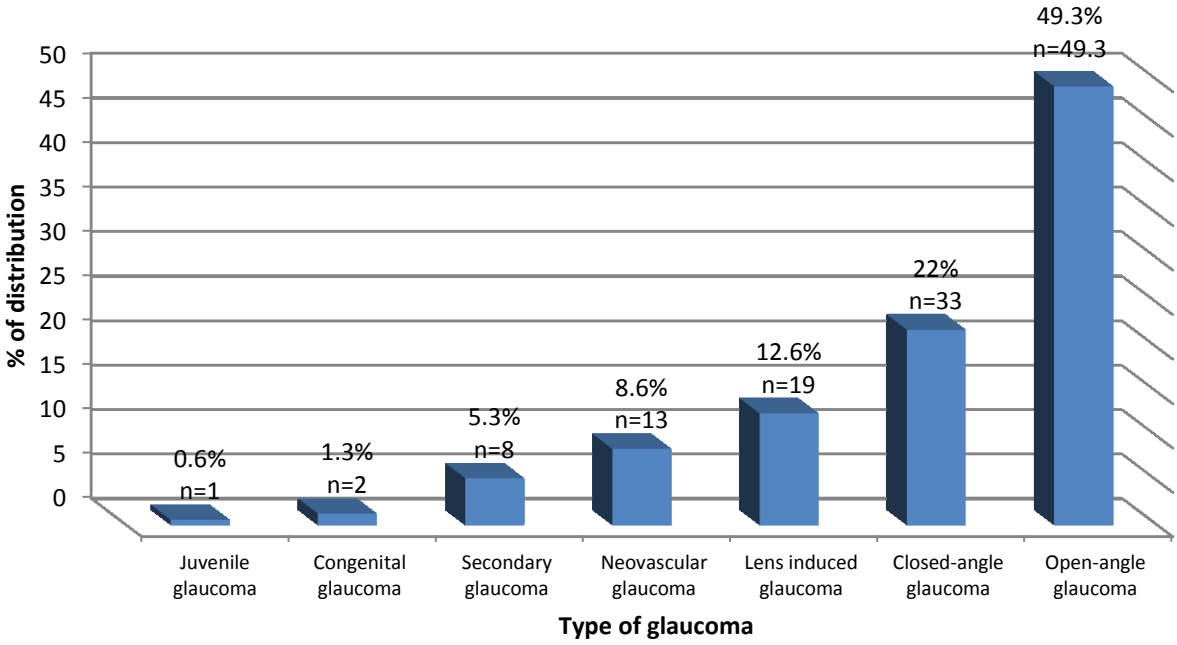

Figure 1: Types of glaucoma.

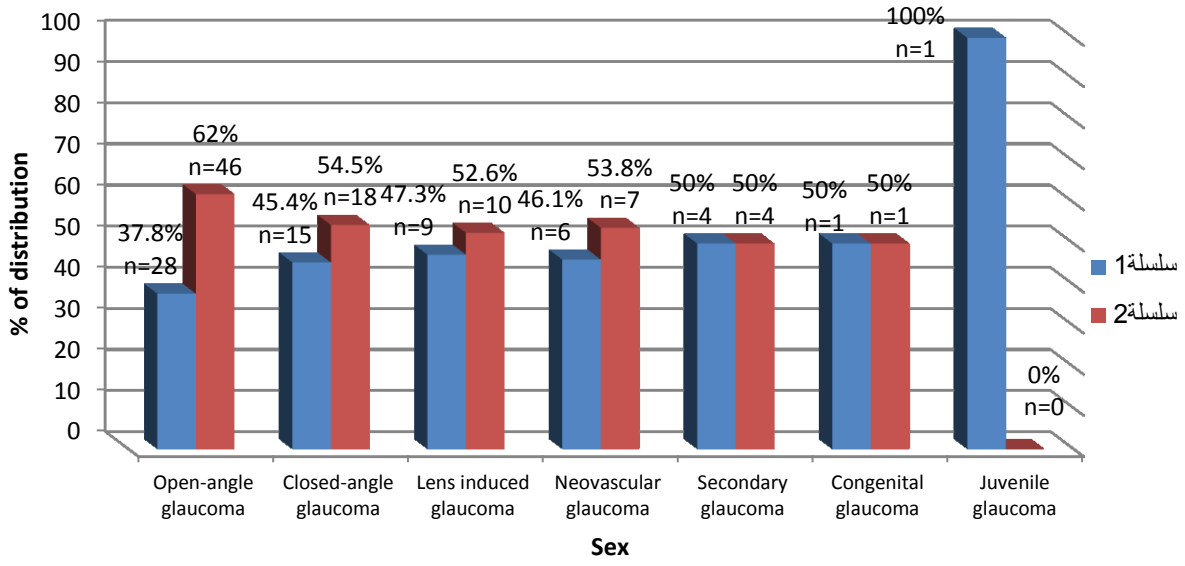

Figure 2: Showing relationship between sex and type of glaucoma disease.

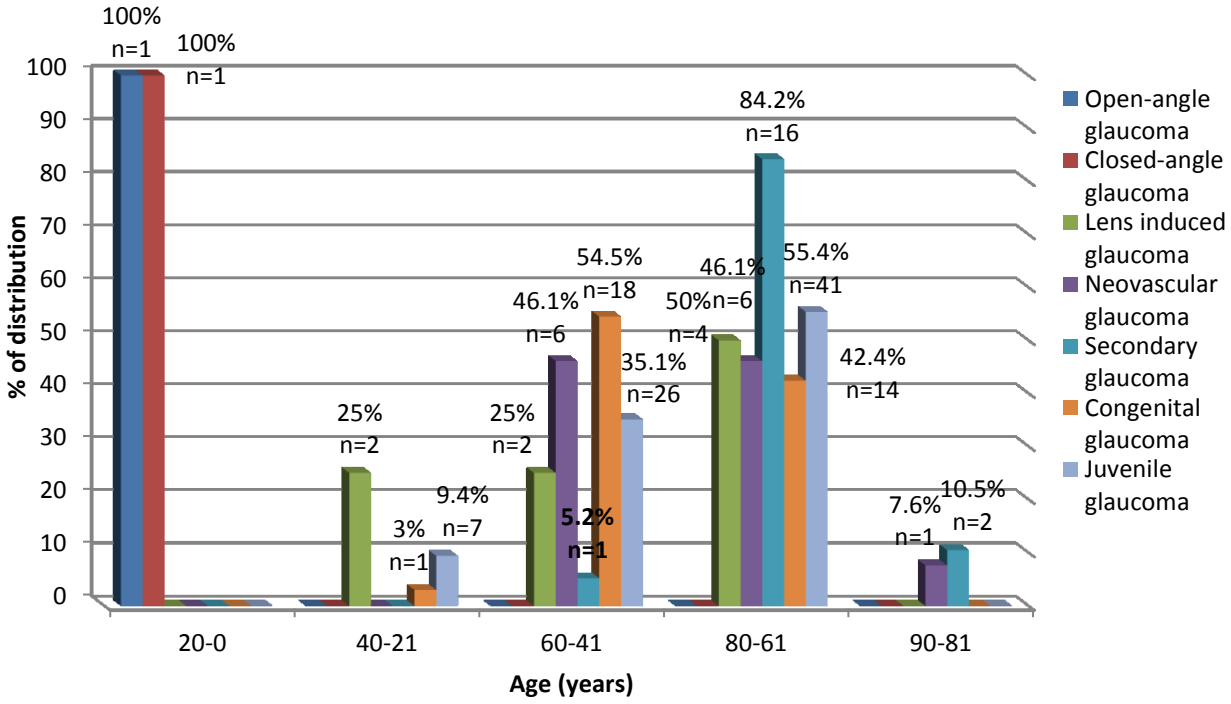

Figure 3: Age of patients with glaucoma.

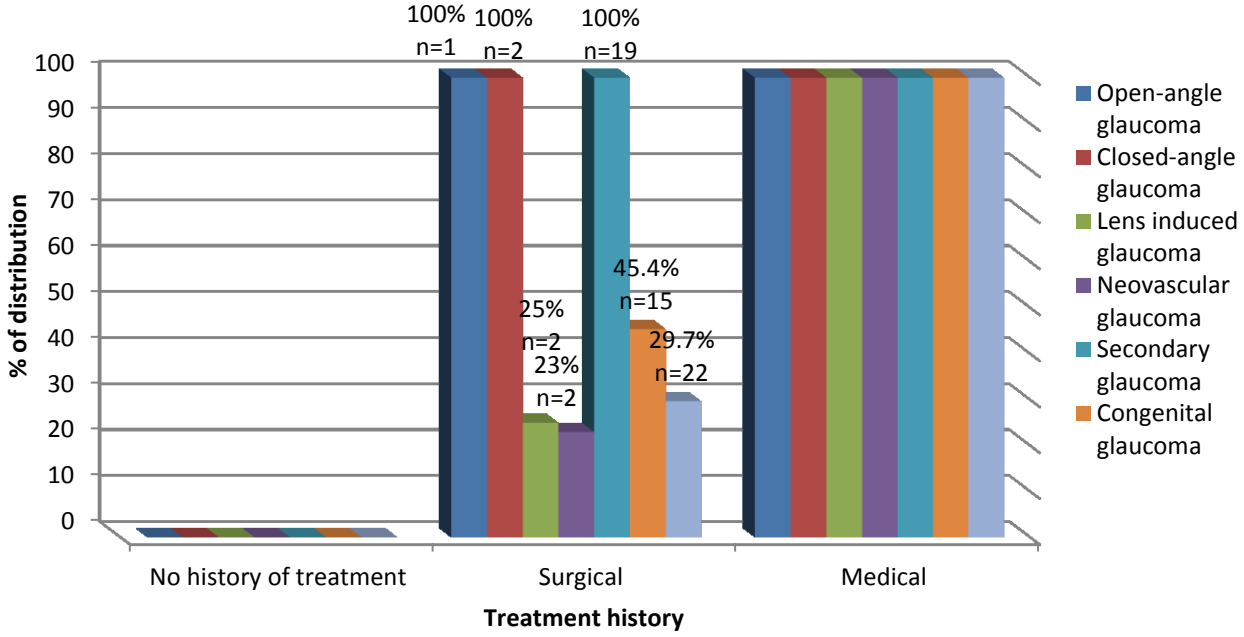

Figure 4: showing relation between treatment history and type of glaucoma.

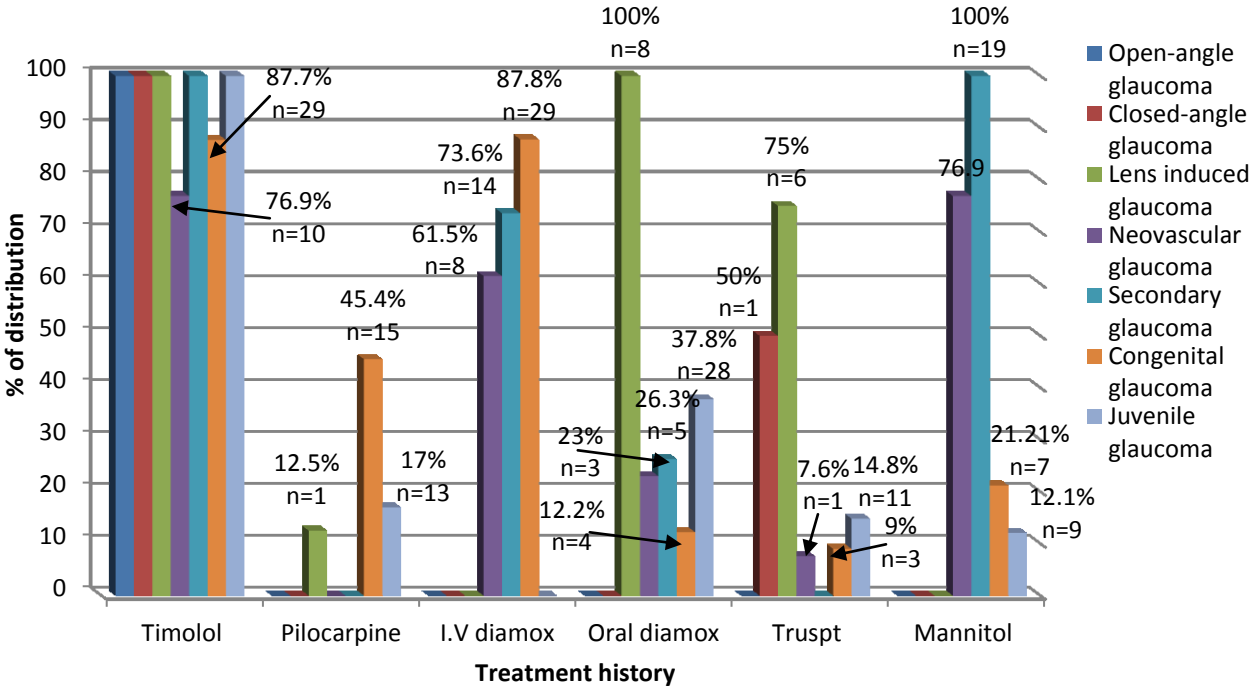

Figure 5: Drugs used in treatment of glaucoma.

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