



Overview of Primary Angle-Closure Glaucoma Patients at Dr. Mohammad Hoesin General Hospital, Palembang, Indonesia

Mohammad Fazel Iftikhar Syahdafy^{1*}, Prima Maya Sari², Fatmawati³, Fidalia², Muhammad Usman Salim²

¹Medical Education Study Program, Faculty of Medicine, Universitas Sriwijaya, Palembang, Indonesia

²Department of Ophthalmology, Faculty of Medicine, Universitas Sriwijaya /Dr. Mohammad Hoesin General Hospital, Palembang, Indonesia

³Department of Biochemistry and Medical Chemistry, Medical Education Study Program, Faculty of Medicine, Universitas Sriwijaya, Palembang, Indonesia

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*Corresponding author:

Mohammad Fazel Iftikhar Syahdafy

E-mail address:

fazelsyahdafy@gmail.com

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ABSTRACT

Introduction: Glaucoma is a disturbance of part or all of the visual field caused by damage to the optic nerve and increased intraocular pressure, and obstruction of the outflow of aqueous humor, which causes optic neuropathy, loss of visual field, and in the final stages, can lead to complete blindness. This study aimed to provide an overview of primary angle-closure glaucoma patients at Dr. Mohammad Hoesin General Hospital, Palembang, Indonesia. **Methods:** This research was a descriptive observational study with secondary data, where there were 37 research subjects with 61 eyes. This study presents clinical, sociodemographic, and management data of angle-closure glaucoma patients. Data analysis was carried out univariately with SPSS. **Results:** The majority of angle-closure glaucoma patients are aged 40-64 years and are female. Family history with glaucoma disorders has not provided optimal data because the majority of these data are not found. The majority of glaucoma patients have intraocular pressure ≤ 21 mmHg. The majority of research subjects do not have refractive disorders. The majority of patients receive medical therapy in the form of 2-3 types of eye drops. The majority of patients are diagnosed with PACG. **Conclusion:** The majority of angle-closure glaucoma patients at Dr. Mohammad Hoesin General Hospital, Palembang, Indonesia, have normal intraocular pressure without refractive errors and receive combination therapy of 2-3 eye drops.

1. Introduction

Glaucoma is a disturbance of part or all of the visual field caused by damage to the optic nerve and increased intraocular pressure, and obstruction of the outflow of aqueous humor, which causes optic neuropathy, loss of visual field, and in the final stages, can lead to complete blindness. The global prevalence of glaucoma for people aged 40-80 years is 3.54%. The incidence of glaucoma in 2040 is estimated to reach 111.8 million cases, with the incidence of blindness being found to be more frequent in patients with angle-closure glaucoma. Types of primary angle-closure

glaucoma abnormalities are classified into 5, namely primary angle-closure suspect (PACS), primary angle-closure (PAC), primary angle-closure glaucoma (PACG), and acute primary angle-closure (APAC) and chronic angle-closure glaucoma (CACG).¹⁻⁵

The risk of developing glaucoma, the progression of the disease to cause blindness, is associated with various risk factors. In addition to high intraocular pressure, which can be a risk factors for glaucoma are gender, age, race, type/type of glaucoma, family history of glaucoma, diseases that affect vascular and vision, and medical history obtained. Efforts to explore

various risk factors for angle-closure glaucoma cases are a priority. An optimal understanding of the risk factors for angle-closure glaucoma will improve service optimization and prevent blindness due to angle-closure glaucoma.⁶⁻¹⁰ This study aimed to provide an overview of primary angle-closure glaucoma patients at Dr. Mohammad Hoesin General Hospital, Palembang, Indonesia.

2. Methods

This study was a descriptive observational study and used secondary data in the form of medical records at the medical records installation of Dr. Mohammad Hoesin General Hospital, Palembang, Indonesia. There were 37 research subjects with 61 eyes participating in this study. The research subjects met the inclusion criteria in the form of patients who had been diagnosed with primary angle-closure glaucoma at Dr. Mohammad Hoesin General Hospital for the January-July 2022 period and had complete medical record data. This study was approved by the research ethics committee of the Faculty of Medicine, Universitas Sriwijaya (Number: 225-2022).

This study observed sociodemographic, general clinical, and special eye clinical data in patients with primary angle-closure glaucoma. Data analysis was performed with the help of SPSS version 25. Univariate analysis was performed to present the frequency distribution of various sociodemographic, general clinical, and specific clinical data by presenting frequencies, percentages, and mean with a standard deviation.

3. Results

Table 1 shows the description of primary angle-closure glaucoma patients. The majority of angle-closure glaucoma patients are aged 40-64 years and are female. Family history with glaucoma disorders has not provided optimal data because the majority of these data are not found. The majority of glaucoma patients have intraocular pressure ≤ 21 mmHg. The majority of research subjects do not have refractive disorders. The majority of patients receive medical

therapy in the form of 2-3 types of eye drops. The majority of patients are diagnosed with PACG.

4. Discussion

In this study, the majority of patients had intraocular pressure ≤ 21 mmHg in 50 eyes (82%). This finding is in line with a study conducted in India in 2001-2003, where 52.94% of patients had intraocular pressure ≤ 21 mmHg. These results were obtained due to high public awareness of glaucoma so that diagnosis and therapy can be obtained more quickly. These results can also be obtained because the patient's intraocular pressure is measured after the patient has received medical therapy or surgery/laser at Dr. Mohammad Hoesin General Hospital, Palembang. The majority of patients' eye vision, which will affect the quality of life in this study, was found to be in normal conditions/with mild and moderate abnormalities. This result is not in line with other studies, which state that the majority of patients' vision is in the blind category (47.24%). These different results can be due to the fact that in this study, the patient group also consisted of patients who had received therapy before coming to Dr. Mohammad Hoesin General Hospital, Palembang.¹¹⁻¹⁴

In terms of the therapy given, it was found that there were no findings at all with surgery/laser alone. The most widely used therapy in this study was medication alone (2-3 types) in 20 eyes (32.8%). In contrast to other studies, which state that the most frequently used therapy is a combination of medication and surgery/laser (50.9%). This difference in results can be explained by considering that therapeutic decisions still need to pay attention to the patient's clinical situation. Where in this study, the majority of patients' intraocular pressure was ≤ 21 mmHg, and the majority of patients' vision was in the normal/mild abnormality category, so medical therapy was considered first. On the other hand, combination therapy is chosen when medical therapy alone is not enough to reduce the patient's intraocular pressure.¹⁵⁻

Table 1. Overview of primary angle-closure glaucoma patients.

| Characteristics | Frequency (f) | Percentage (%) |
|---|---------------|----------------|
| Age | | |
| < 40 years | 2 | 5,4 |
| 40-64 years | 31 | 83,8 |
| ≥ 65 years | 4 | 10,8 |
| Gender | | |
| Male | 10 | 27 |
| Female | 27 | 73 |
| Family history | | |
| Yes | 0 | 0 |
| No | 7 | 18,9 |
| N/A | 30 | 81,1 |
| Intraocular pressure | | |
| ≤ 21 mmHg | 50 | 82 |
| > 21 mmHg | 11 | 18 |
| Visus | | |
| Normal/mild | 24 | 39,3 |
| Moderate | 22 | 36,1 |
| Severe | 7 | 11,5 |
| Blind | 8 | 13,1 |
| Medicamentosa | | |
| 1 type | 16 | 26,2 |
| 2-3 types | 20 | 32,8 |
| 4 types | 2 | 3,3 |
| Surgery/lasers | | |
| 1 type | 0 | 0 |
| 2 types | 0 | 0 |
| 3 types | 0 | 0 |
| Combination | | |
| Medicamentosa (1 type) + Surgery/laser (1 type) | 4 | 6,6 |
| Medicamentosa (2-3 types) + Surgery/laser (1 type) | 12 | 19,7 |
| Medicamentosa (2-3 types) + Surgery/laser (2 types) | 2 | 3,3 |
| Medicamentosa (4 types) + Surgery/laser (1 type) | 5 | 8,2 |
| Diagnostic classification | | |
| PACS | 4 | 6,6 |
| PAC | 17 | 27,9 |
| APAC | 2 | 3,3 |
| CACG | 0 | 0 |
| PACG | 38 | 62,3 |

5. Conclusion

The majority of angle-closure glaucoma patients at Dr. Mohammad Hoesin General Hospital, Palembang, Indonesia, have normal intraocular pressure without refractive errors and receive combination therapy of 2-3 eye drops.

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