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Characteristics of Senile Cataract Patients Treated at Agoesdjam Hospital Ketapang February-April 2025: A Descriptive Cross-Sectional Study

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ABSTRACT

Introduction: *Senile cataract is opacification of the crystalline lens and can occur with increasing age. This study aims to discover the characteristics of senile cataract patients at Agoesdjam Hospital.*
Methods: *This is a descriptive study with a cross-sectional approach. Data were taken from medical records of patients with the diagnosis of cataract at Agoesdjam Hospital in February-April 2025.*
Result: *A total of 164 senile cataract patients and 294 eyes with cataract had been examined at Agoesdjam Regional Hospital with majority of patients were female (51.2%). Senile cataracts were found mostly in the 56-65 years age group (37%), came from Delta Pawan District (31.09%), and were diagnosed at the immature cataract stage (67.6%). From 164 patients, 15.2% of patients have diabetes mellitus and 46.9% of patients have hypertension.*
Conclusion: *Senile cataracts at Agoesdjam Hospital were mostly found in female patients, in the age group of 56-65 years old, living in Delta Pawan District, at the immature cataract stage, have history of diabetes mellitus and hypertension. The result of this research highlights the importance of early detection of cataract to optimize treatment outcome.*
Keywords: *Senile Cataract, Agoesdjam Hospital, Diabetes mellitus, Hypertension.*

ABSTRAK

Pendahuluan: Katarak senilis adalah kekeruhan pada lensa dan dapat terjadi seiring bertambahnya usia. Penelitian ini bertujuan untuk mengetahui karakteristik pasien katarak senilis di RSUD Agoesdjam.
Metode: Penelitian ini merupakan penelitian deskriptif dengan pendekatan cross sectional. Data diambil dari rekam medis pasien yang didiagnosis katarak senilis di RSUD Agoesdjam dalam periode Februari-April 2025.
Hasil: Sebanyak 164 pasien katarak senilis dan 294 mata dengan katarak telah diperiksa di RSUD Agoesdjam dengan mayoritas pasien berjenis kelamin perempuan (51.2%). Katarak senilis ditemukan paling banyak pada kelompok usia 56-65 tahun (37%), berasal dari Kecamatan Delta Pawan (31.09%), dan terdiagnosis pada stadium katarak immatur (67.6%). Dari 164 pasien, 15.2% pasien memiliki riwayat diabetes mellitus dan 46.9% pasien memiliki riwayat hipertensi.
Kesimpulan: Katarak senilis di RSUD Agoesdjam ditemukan paling banyak berjenis kelamin perempuan, kelompok usia 56-65 tahun, tinggal di Kecamatan Delta Pawan, stadium katarak immatur memiliki riwayat diabetes mellitus dan hipertensi. Hasil penelitian menunjukkan pentingnya deteksi dini katarak untuk mengoptimalkan hasil pengobatan.
Kata kunci: Katarak Senilis, RSUD Agoesdjam, Diabetes mellitus, Hipertensi

INTRODUCTION

Cataract is opacification of the crystalline lens due to changes in the composition and physiological mechanisms of the lens. Cataract can be divided into congenital cataracts and senile cataracts. Senile cataracts are opacification of the crystalline lens due to the aging process which generally occurs in people over the age of 50 years. According to WHO, there were 285 million patients with visual impairment worldwide in 2010 and 51% of them had cataracts.[1] From 1990-2021, the Global Burden Disease Study stated that there were increasing cataract cases from 3.42 million to 6.55 million globally.[2] According to the Rapid Assessment of Avoidable Blindness (RAAB) survey, the prevalence of blindness due to cataracts in Indonesia was 3.0% with 70-80% of cases suffering from severe visual impairment. However, there was lack of cataract characteristic data at Agoesdjam Hospital, Ketapang, Kalimantan Barat.[3]

Several risk factors of cataract are genetic, UV light radiation, dietary factors, smoking, hypertension and diabetes mellitus. People with hypertension and diabetes mellitus are 1.06 times and 1.13 times riskier to developing cataracts than normal people.[4,5] The high prevalence of cataracts in Indonesia presents a significant public health concern. This is first research about characteristic of cataract at Agoesdjam Hospital. It aims to discover more about the characteristics of senile cataract patients at the eye clinic of Agoesdjam Hospital.

METHODS

This study was a cross-sectional descriptive study based on secondary data, using medical records of senile cataract patients at Agoesdjam Regional Hospital that recorded in February - April 2025. Data collection was conducted from February to April 2025. The sampling technique in this study used total sampling of all senile cataract patients who met inclusion and exclusion criteria. The accessible population in this study were senile cataract patients at the Agoesdjam Hospital. The inclusion criteria were patient diagnosed with senile cataracts from February to April 2025 and the patient have medical record that contained diagnosis, age, gender, cataract stage, history of hypertension and diabetes mellitus. The exclusion criteria were incomplete medical record.

The variables used in this study included age, gender, history of hypertension, history of diabetes mellitus, and cataract stage. The analysis of data was conducted in June-July 2025. The collective samples were processed in univariate analysis with Microsoft Excel 360 and the result of patient's characteristics would be shown in table and narration.

RESULT

In February-April 2025, the characteristic of 164 patients visiting Eye Clinic in Agoesdjam hospital were taken. In this study, we found that there were more female (51,2%) than male (48,8%) patients with senile cataracts. Based on age, the majority of patients with senile cataract were 56-65 years old, which was 37%. In contrast, the least number of patients with senile cataracts was 36-45 years old (4%).

Ketapang Regency has twenty sub districts. Simpang Hilir, Sukadana, Teluk Batang and Tumbang Titi are sub district of Kabupaten Kayong Utara. Data showed that majority of patients with cataract came from Delta Pawan (31.09%). From 164 patients, we examined 328 eyes in Agoesdjam Hospital, and found 294 eyes with cataract. In this research, we found that patients came to Agoesdjam Hospital at an immature stage of cataract (67.6%). Several senile cataract patients also have hypertension (46.9%) and diabetes mellitus (15.2%).

Table 1. Characteristic Cataract Patients in Agoesdjam Hospital in February-April 2025

Variable	Number	Percentage
Gender		
Male	80	48.8%
Female	84	51.2%
Age		
Adult (36-45yo)	8	4%
Elderly (46-55yo)	36	21%
Late Elderly (56-65yo)	62	37%
Geriatric (>65yo)	58	35.3%
Sub District		
Benua Kayong	19	11.5%
Delta Pawan	51	31.09%
Hulu Sungai	1	0.60%
Jelai Hulu	3	1.82%
Kendawangan	16	9.75%
Marau	2	1.21%
Matan Hilir Utara	8	4.87%
Matan Hilir Selatan	11	6.70%
Muara Pawan	7	4.26%
Nanga Tayap	5	3.04%
Pulau Maya	6	3.65%
Sandai	3	1.82%
Simpang Hilir	8	4.87%
Singkup	1	0.60%
Sungai Melayu Rayak	11	6.70%
Teluk Batang	2	1.21%
Tumbang Titi	2	1.21%
Stage of Cataract		
Incipient	0	0%
Immature	222	67.6%
Mature	67	20.4%
Hipermature	5	1.5%
Comorbid		
Diabetes Mellitus		
Yes	25	15,2%
No	139	84.7%
Hypertension		
Yes	77	46.9%
No	87	53.04%

DISCUSSION

Cataract is opacity of the crystalline lens present in the eye. The lens fibers are made from the lens epithelium and migrate from the margin towards the center. The nucleus of the lens is derived from older lens fibers and can cause opacity. Cataract is the leading cause of reversible visual impairment and blindness globally.[6,7]

From 164 patients who were diagnosed with cataract during February-April 2025, majority of patients were female (51.2%) and at 56-65 years old (37%) age group. Based on Tian Hong Wu et al ,increasing age and female gender were risk factor of cataract. The number of female's cases was 1,6 times than male's cases. The number of cataracts increased with age until 64.[9] This study also aligned with Tahayana study in Bali which said majority of senile cataract patients on 70-79 years old age group because biochemical changed on the lens as increasing age.[8] Several pathophysiology occurs on senile cataract, like reduction of glutathione activity and oxidative stress accumulation of lens protein. Female gender is one of risk factor because they have estrogen hormone which has function to protect the lens from cataractogenesis, and after menopause, the level of estrogen will be reduced.[9]

In this study, we found that most patients with cataract came from Delta Pawan (31,09%). This happened because the Agoesdjam Hospital is located at Delta Pawan subdistrict.[10] Based on maturity of cataract, there are 4 types of cataracts which are named incipient, immature, mature, and hypermature. Incipient cataract is minimal opacity of lens, so the patient won't notice decreased visual acuity. Immature cataract is partially opaque on lenticular fibers of lens that decreased visual acuity. Mature cataract is where the lens is completely opaque and hypermature cataract when the lens is shrunken and wrinkled due to leakage of fluid out of the lens.[12]

Majority of patients came to Eye Clinic of Agoesdjam Hospital when they were at immature stage of cataract (67.6%). Based on Putri A et al study in Bali, majority of cataract patient came to eye clinic were immature cataract (76%). This condition happened because partially opacity of the lens will scatter the light that enters the pupil into the retina and will decrease visual acuity. [11,13] Myopization also occurs on immature stage of cataract because of lens swelling. [14]

Another risk factors of cataract are UV radiation, dietary factors (deficient in certain protein amino acid), smoking, hypertension and diabetes mellitus.[15,16] In this study, cataract patients also have hypertension (46.9%) and diabetes mellitus (15.2%). Based on previous study by Ni Kadek Inka et al, there were 6% cataract patients with diabetes mellitus and 8,4% cataract patients with hypertension.[14] Diabetes mellitus can increase blood glucose that can be converted to sorbitol which increases osmotic pressure. This condition will make opacity of the lens.[6] Hypertension were 1.13 times more likely to have cataracts compared to those without hypertension. The mechanism of hypertension on cataract is unclear. However, hypertension and diabetes mellitus aren't the main risk factors of cataract. Many risk factors of cataract can affect cataractogenesis like we mentioned before.[17]

This study was first study about characteristic of cataract at Agoesdjam Hospital. We hope our study can be implied for Agoesdjam Hospital to increase the service of the eye clinic, especially in early detection of cataracts. With early diagnosis of cataract, we can treat the patient appropriately and prevent the cataract into blindness.

Limitation of this study was a limited number of samples, so it cannot describe cataract cases in general. We didn't assess another risk factor of cataract such as genetic, UV light exposure, job and smoking. We suggest that the future research on cataracts will use a larger sample size and another risk factor of cataract.

CONCLUSION

During February-April 2025, there were more women than men cataract patients in the eye clinic of Agoesdjam Hospital. Majority of senile cataract patients was 56-65 years old, had immature cataract and came from Delta Pawan. None of patients came with incipient cataract. From 164 patients with senile cataracts, several patients also have diabetes mellitus and hypertension. Future studies should explore cataract with a larger sample and study about another risk factor of cataract include hereditary, UV light exposure, job and smoking. Importance of early detection of cataract at Agoesdjam Hospital can optimize the treatment outcome.

REFERENCE

1. Sreelakshmi V and Abraham A. Age Related or Senile Cataract: Pathology, Mechanism and Management. Austin J Clin Ophthalmol. 2016; 3(2): 1067.
2. Li M, Jia W, Song J, Ma J, Zhou Y, Han Y, et al. Global Prevalence and Years Lived with Disability (YLDs) of Cataract in 204 Countries and Territories: findings from the Global Burden of Disease Study 2021. Eye.2025;39(1):1737-17
3. Director General of Disease Prevention and Control, Indonesian Ophthalmology Association, International Agency for the Prevention of Blindness. Roadmap of Visual Impairment Control Program in Indonesia. Jakarta: Ministry of Health of Indonesia; 2017.
4. Yuan S, Wolk A, Larsson S. Metabolic and lifestyle factors in relation to senile cataract: a Mendelian randomization study. Nature. 2022;12(1):409
5. Lange N, Jagiello K, Bandosz P. Risk Factors for Self Reports of Diagnosed Cataracts Among Older Adults in Poland. BMC Public Health.2025;25 (1):1933
6. Kumari R. Senile Cataract. Communitymedjournal. 2024; 5(1): 001-007
7. Alshamrani AZ. Cataracts Pathophysiology and Managements. The Egyptian Journal of Hospital Medicine.2018;70(1):151-154
8. Tahayana IB, Lestarini A, Sunariasih N. Karakteristik Pasien Katarak di Rumah Sakit Ari Canti Periode Tahun 2017-2019. Aesculapius Medical Journal. 2024; 4(1):1-8
9. Wu TW, Jiang B, Liu WM, Li JQ, Song ZY, Lu PR. Time Trends and Gender Disparities of Chinese Cataract Burden and Their Predictions. Int J Ophtalmol.2023;16(9):1527-1534
10. Ruhmahorbo RR, Farisi MC, Sulthani MB. Kabupaten Ketapang Dalam Angka 2024.Ketapang: Badan Pusat Statistik; 2024.
11. Nizami A, Gurnani B, Gulani A. Cataract. Statpearls [Internet].2024. [Cited on 2025 June 16]. Available from: https://www.ncbi.nlm.nih.gov/books/NBK539699/
12. Tsai LM, Afshari NA, Brasington CR, Cole C, Currie BD, Edgington BD, et al. Evaluation and management of cataracts. Basic and Clinical Science Course, Section 11. Lens and

Cataract. San Fransisco: American Academy of Ophthalmology; 2023.
13. Putri A, Adiputra KP, Kartiningsih P, Dwipayani NM, Prahesthy HP. Characteristic of Cataract Patients in Wangaya Hospital Bali Year 2019: A Descriptive Study. EJMED.2020;2(2)
14. Widyasastrawati NK, Permatananda PA, Putra IP. Karakteristik Penderita Katarak Senilis di Rumah Sakit Umum Darah Tabanan Tahun 2023. Aesculapius Medical Journal. 2025;5(1):40-46
15. Whelton PK, Carey RM, Aronow WS, Casey DE, Collins KJ, Himmelfarb CD, et al. 2017ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/ NMA/PCNA guideline for the prevention, detection, evaluation, and management of high blood pressure in adults: a report of the American College of Cardiology/American Heart Association Task Force on Clinical Practice Guidelines. *Hypertension*. 2018;71(6): e13-e115.
16. Chan M. Global report on diabetes. WHO press [Internet]. 2016. [Cited on 2025 June 15]. Available from :https://www.who.int/publications/i/item/9789241565257
17. Hambisa MT, Gore XD, Byles JE. A Longitudinal Analysis of Factors Associated with Age Related Cataract Among Older Australian Women: A Cohort Study of 7851 older Australian Women 79-90 Years. Irish Journal of Medical Science.2023;192(1):1525-1536