Complication and Management of Cataract Surgery, a Retrospective Analysis

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ABSTRACT:
Cataract surgery is one of the most common ophthalmological procedures, essential for restoring vision in patients with cataracts. Despite its routine nature, factors such as demographic characteristics, comorbidities, and postoperative outcomes significantly. This study evaluates the treatment of cataracts through surgery and its postoperative progress, focusing on demographic factors, clinical presentation, diagnostic methods, and the prevalence of complications and pain following surgery. A retrospective cohort study was conducted using data from 89 patients who underwent cataract surgery at a private hospital in Tirana between December 2020 and August 2021. Data on demographic characteristics, associated comorbidities, diagnostic methods, duration of postoperative stays, complications, and pain levels were collected and analyzed. The majority of patients were male (62.92%), and the most affected age group was 66–71 years (30.34%). Comorbidities were present in 23.6% of patients, with diabetes mellitus (42.86%) and arterial hypertension (28.57%) being the most common. The diagnosis was confirmed in all cases via slit-lamp biomicroscopic with mydriasis. A postoperative hospital stay of one day was observed in 91.01% of patients, with complications occurring in only 3.37% of cases. Postoperative pain was predominantly mild, reported by 87.64% of patients. Cataract surgery is a highly effective and safe procedure, with minimal complications and a short recovery period. The findings underscore the importance of early detection, effective management of comorbidities, and standard diagnostic protocols to optimize patient outcomes in Albania.

1. Introduction

Cataracts are a leading cause of visual impairment worldwide, characterized by the clouding of the eye's natural lens, which results in blurred vision and, if untreated, blindness [1]. Cataract surgery, a highly effective procedure involving the removal of the cloudy lens and its replacement with an artificial intraocular lens, remains the only definitive treatment for this condition. Advances in surgical techniques and technology have made cataract surgery one of the safest and most performed procedures in ophthalmology [2], with millions of surgeries conducted globally each year.

This study investigates the treatment and postoperative outcomes of cataract surgery in a private hospital in Tirana, Albania. Visual impairment has an important role in quality of life [3]. A particular focus is placed on the demographic characteristics of patients, including age and gender distribution, as well as associated comorbidities such as diabetes mellitus and arterial hypertension, which may influence surgical outcomes. Additionally, the study evaluates the clinical presentation, diagnostic methods employed, the duration of hospital stays, and the incidence of postoperative complications and pain.

By analyzing these factors, this research aims to provide valuable insights into the effectiveness of cataract surgery in the Albanian population, highlight potential challenges, and contribute to optimizing treatment protocols. The findings are expected to enhance understanding of the demographics and clinical outcomes associated with cataract surgery, paving the way for improved patient care and resource allocation in ophthalmological practice.

2. Objectives

The study aims to evaluate the treatment of cataracts through cataract surgery and its postoperative progress, highlighting the disease's demographic factors, clinical presentation, and diagnostic methods.

Objectives

- To determine the distribution of patients included in the study by gender.
- To determine the distribution of patients included in the study by age group.
- To identify whether these patients have associated pathologies or not.
- To evaluate the diagnostic methods used in the patients included in the study.
- To assess the duration of the postoperative stay.
- To determine the distribution of patients with and without postoperative complications.
- To evaluate postoperative pain.

3. Methods

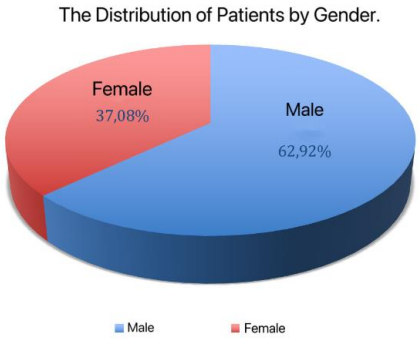
The study is a retrospective cohort study. The material was taken from the patient records of individuals admitted to a private hospital in Tirana from December 2020 to August 2021. In our study, 89 patients who underwent cataract surgery were randomly selected. The relevant records were obtained from the Statistics Service through identification numbers. For each patient, a corresponding sheet was prepared, which includes the following components:

- Demographic data, including gender and age characteristics.
- Clinical presentation, which includes complaints, signs, and symptoms of the patient.
- Associated diseases.
- Diagnostic methods used.

- Postoperative progression and treatment.
- Duration of hospital stay.

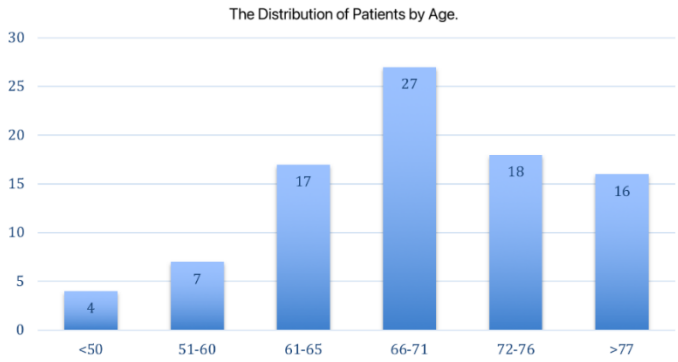
4. Results

The description of demographic characteristics.

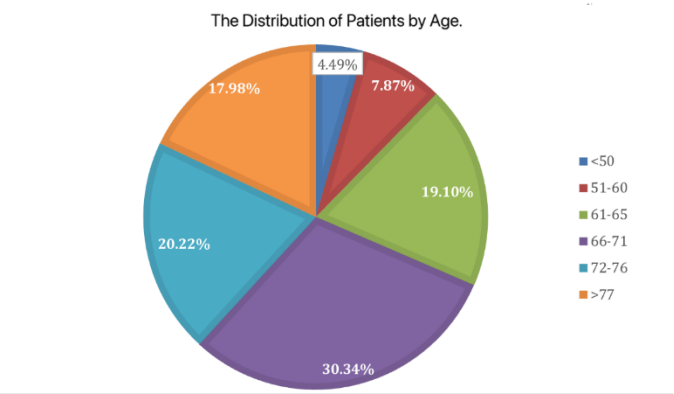


Graph 1.1 Distribution of patients by gender expressed as a percentage.

In our study, the predominant gender is male, representing 62.92% (56 patients). The female gender accounts for 37.08% of the patients included in the study (33 patients).



Graph 2.1 Number of patients by age group.

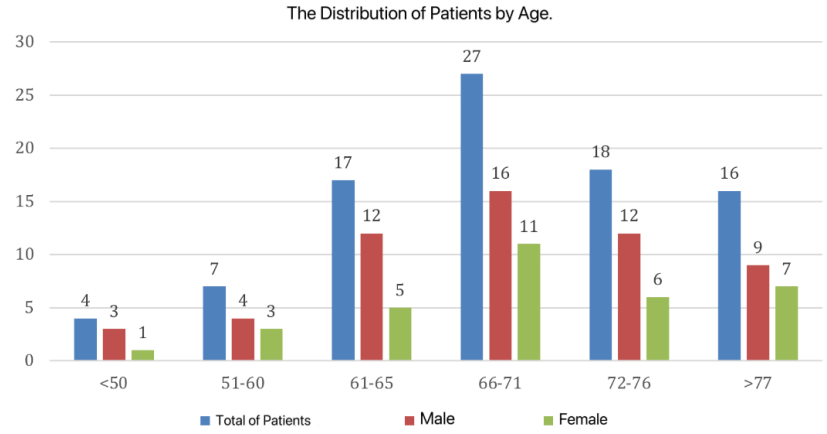


Graph 2.2 Distribution of patients by age group in percentages.

The most affected age group is 66-71 years, representing 30.34% of the patients included in the study (27 patients). The least affected age group is 50 years, with a percentage of 4.49% (4 patients). The second most affected age group is 72-76 years, accounting for 20.22% (18 patients). The third and fourth most affected age groups are 61-65 years, representing 19.10% (17 patients), and those over 77 years, making up 17.98% (16 patients), respectively. A lower percentage is seen in the age group 51-60 years, which ranks fifth, with 7.87% (7 patients).

Age	Total		Male		Female	
Patient's age	Nr	%	Nr	%	Nr	%
<50	4	4,49 %	3	5,36 %	1	3,03 %
51-60	7	7,87 %	4	7,14 %	3	9,09 %
61-65	17	19,10 %	12	21,43 %	5	15,15 %
66-71	27	30,34 %	16	28,57 %	11	33,33 %
72-76	18	20,22 %	12	21,43 %	6	18,18 %
>77	16	17,98 %	9	16,07 %	7	21,21 %
Total	89	100,00 %	56	100,00 %	33	100,00 %

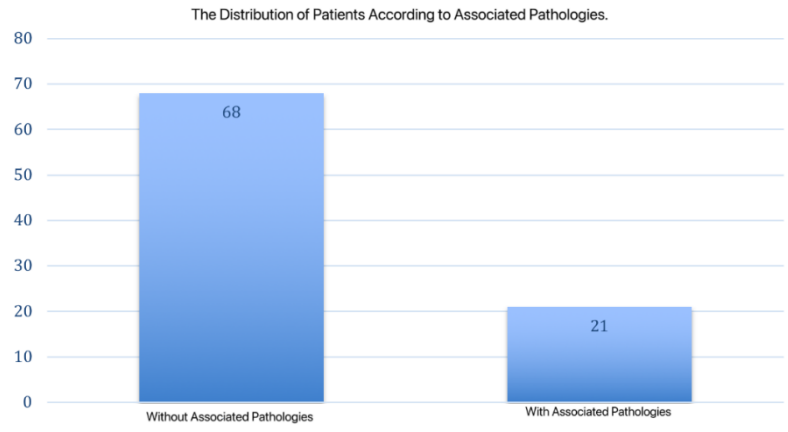
3.1 Presentation of the distribution of patients by age groups in numerical values and percentages, among total patients, male patients, and female patients.



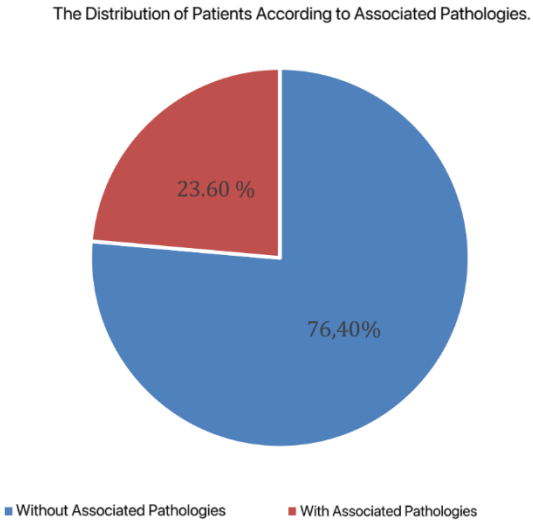
Graph 3.2 Graphic representation of the distribution of patients by age groups in numerical values.

The most affected age group is 66-71 years, representing 30.34% of the patients included in the study (27 patients). The least affected age group is under 50 years, with a percentage of 4.49% (4 patients). The second most affected age group is 72-76 years, accounting for 20.22% (18 patients). The third and fourth most affected age groups are 61-65 years, representing 19.10% (17 patients), and those over 77 years, making up 17.98% (16 patients), respectively. A lower percentage is observed in the 51-60 years age group, ranked fifth with 7.87% (7 patients).

For male patients, the most dominant age group is 66-71 years, comprising 28.57% of male patients (16 patients), while the least affected age group is under 50 years, at 5.36% (3 patients). The 61-65 years and 72-76 years age groups are represented by the same percentage, 21.43% (12 patients each). Next is the 77+ years age group, accounting for 16.07% (9 patients), followed by the 51-60 years age group with 7.14% (4 patients).



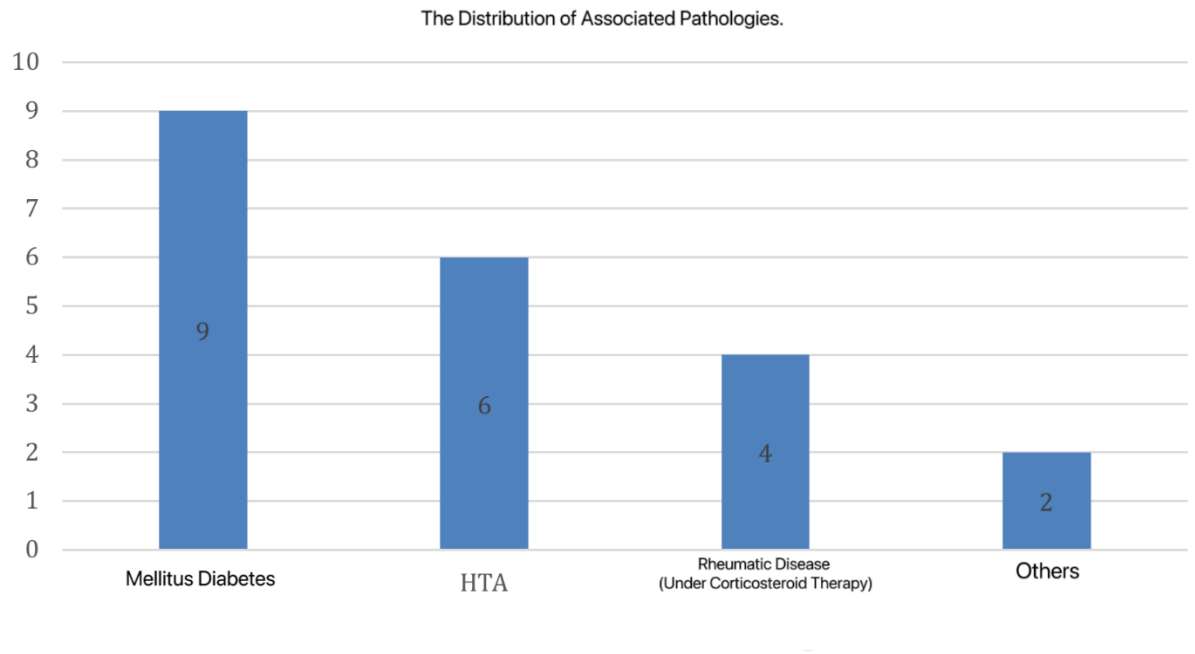
Graph 4.1 Distribution of patients by associated pathologies, expressed in numerical values.



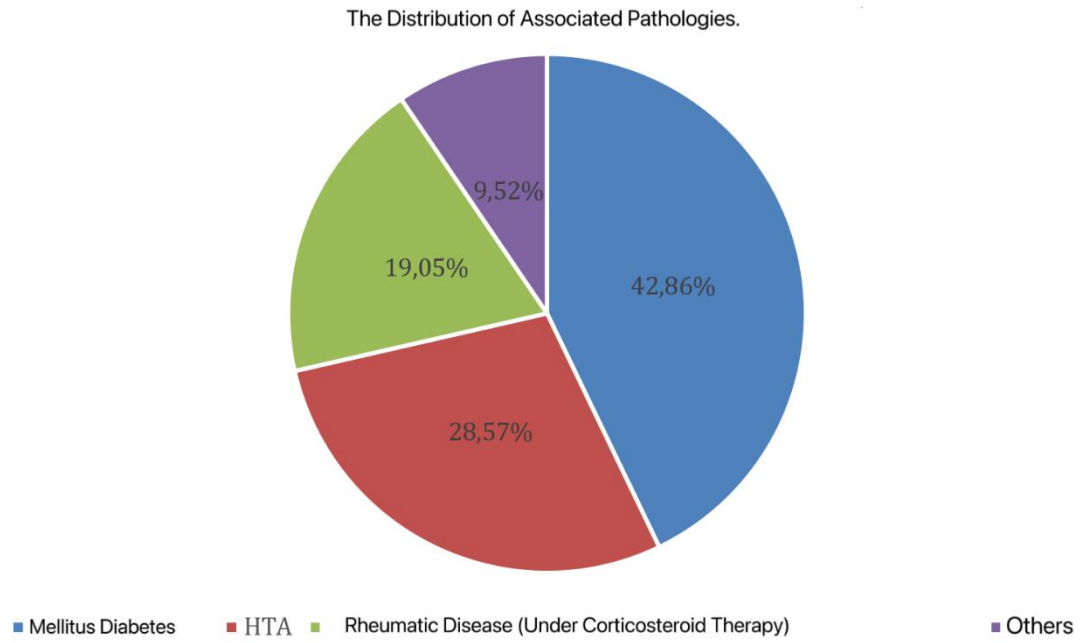
The most dominant age group for female patients is 66-71 years, accounting for 33.33% of female patients (11 patients), while the least affected age group is under 50 years, at 3.03% (1 patient). The 77+ years age group is the second most affected, with 21.21% of female patients (7 patients). The third and fourth most affected age groups are 72-76 years, represented by 18.18% (6 patients), and 61-65 years, represented by 15.15% (5 patients). The fifth-ranked age group, 51-60 years, accounts for 9.09% (3 patients).

Graph 4.2 Distribution of patients by associated pathologies, expressed in percentages.

In 76.40% of patients (68 patients), there are no associated pathologies, while 23.6% of patients (21 patients) have associated pathologies.

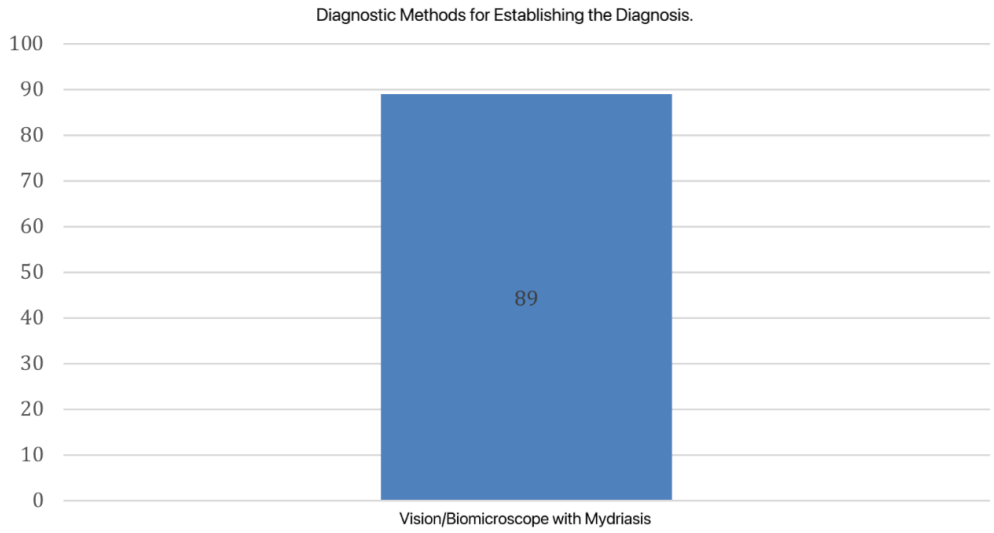


Graph 5.1 Distribution of associated pathologies in patients by type of pathology, presented in numerical values.

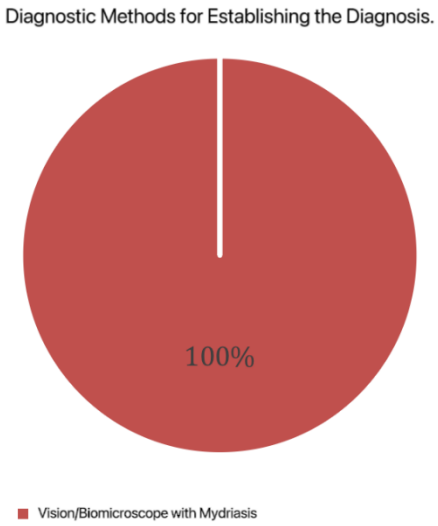


Graph 5.2 Distribution of associated pathologies in patients by type of pathology, presented in percentages.

In our study, 21 patients out of 89 in total presented with comorbidities. The most common associated pathology is Diabetes Mellitus, which accounts for 42.86% of the cases (9 patients). The second most common pathology is arterial hypertension, which accounts for 28.57% of the cases (6 patients). Rheumatic diseases (under corticosteroid therapy) were found as the only associated pathology in 19.05% of the cases (4 patients). Other associated pathologies account for 9.52% (2 patients).

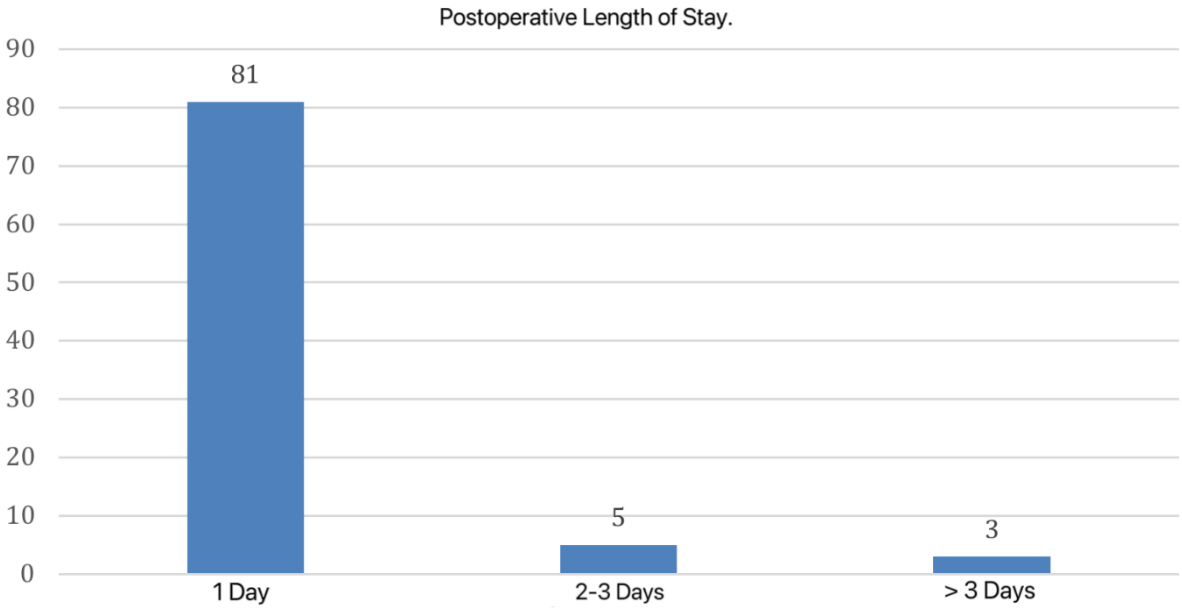


Graph 6.1 Overview of the diagnostic methods used in determining the diagnosis, presented in numerical values.

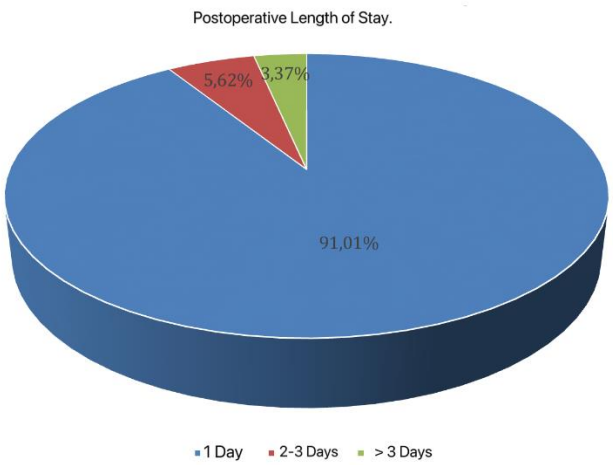


Graph 6.2 Overview of the diagnostic methods used in determining the diagnosis, presented in percentages.

In 100% of cases (89 patients), visual examination and slit-lamp biomicroscopy with mydriasis enable the determination of the diagnosis.

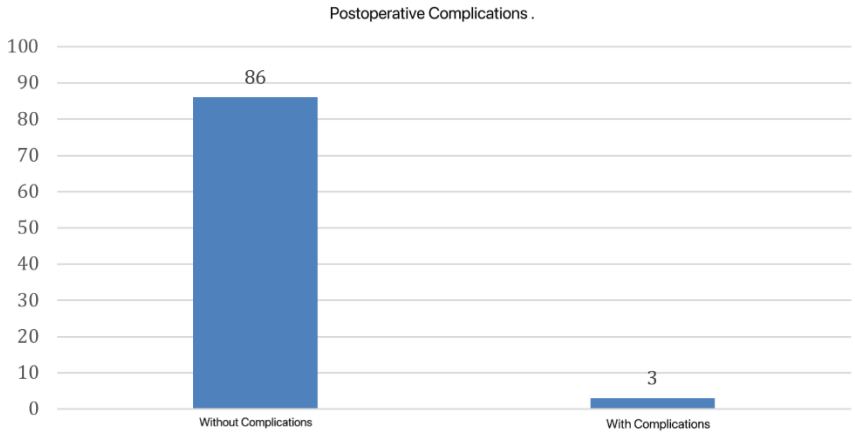


Graph 7.1 Overview of the postoperative stay in patients who underwent cataract surgery, presented in numerical values.

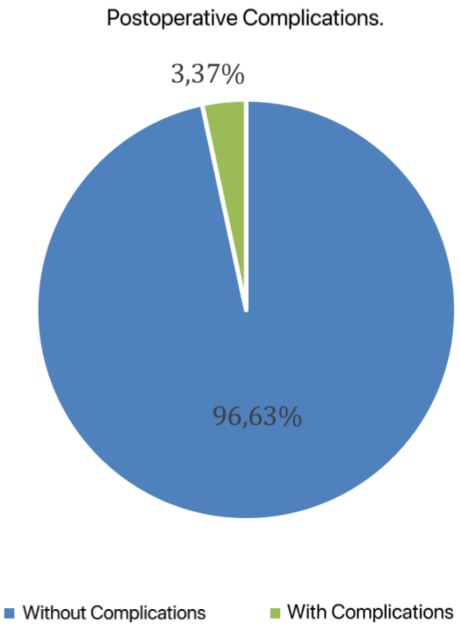


Graph 7.2 Overview of the postoperative stay in patients who underwent cataract surgery, presented in percentages.

Among the patients who underwent cataract surgery, 91.01% (81 patients) had a postoperative stay of 1 day. In 5.62% of patients (5 patients), the postoperative stay lasted 2-3 days. Only 3.37% (3 patients) had a postoperative stay of three or more days.

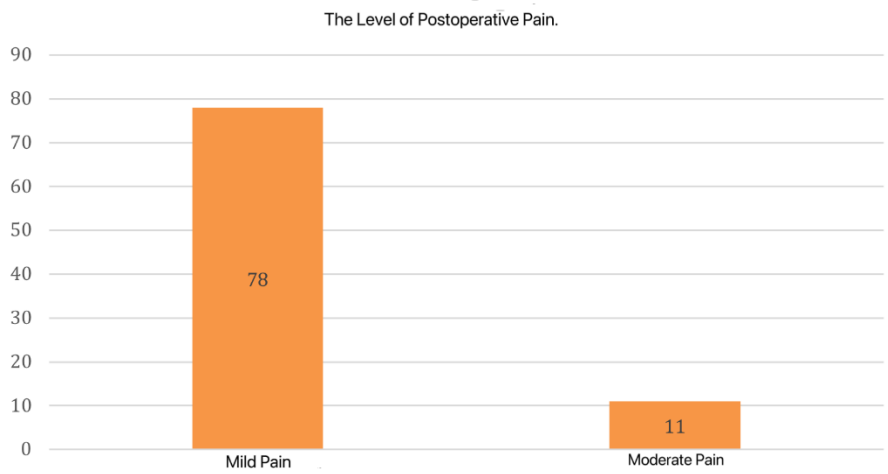


Graph 8.1 Distribution of patients based on the presence or absence of postoperative complications, expressed in numerical values.



Graph 8.2 Distribution of patients based on the presence or absence of postoperative complications, expressed in percentages.

Among the patients who underwent cataract surgery, 96.63% (86 patients) had no postoperative complications, while 3.37% (3 patients) developed postoperative complications.



Graph 9.1 Overview of the representation of pain levels, expressed in numerical values.

Graph 9.2 Overview of the representation of pain levels, expressed in percentages.

Postoperative pain in patients treated through cataract surgery was assessed using the numeric rating scale. Among the patients in the study, 87.64% (78 patients) reported mild pain, while 12.36% (11 patients) reported moderate pain.

5. Discussion

After the development of cataracts, surgery is the only definitive treatment for curing the condition.

Our study includes 89 patients who underwent cataract surgery at a private hospital in Tirana. Among these 89 patients, a predominance of male gender was observed, accounting for 62.92% (56 cases), compared to 37.08% (33 cases) of female patients. Some of the cataracts was from eye trauma, as other studies have shown a prevalence of cataracts in eye trauma [4], [5].

In the male group, the most affected age range was 66-71 years, representing 28.57% (16 cases). Similarly, in females, the same age group, 66-71 years, was the most affected, accounting for 33.33% (11 cases). In both genders, a minimal number of cases were observed in the under-50 age group: 3.03% (1 case) in females and 5.36% (3 cases) in males.

Regarding comorbidities, 76.4% of the patients had no associated conditions, while 23.6% were found to have comorbidities. Among those with comorbidities, diabetes mellitus was the most prevalent condition, present in 42.86% of cases (9 patients). Other studies have shown that eye diseases are correlated with diabetes [6]. Arterial hypertension was the second most common, accounting for 28.57% of cases (6 patients). Other studies have shown that hypertension is related to eye disease and not only in Albania [7]. Rheumatic disease under corticosteroid therapy was observed as an independent comorbidity in 19.05% of cases (4 patients). The remaining cases were associated with other pathologies. Other studies have shown the same thing [8]. [9]. Infection diseases can have an impact on cataracts but in our study [10], we did not find this.

In terms of diagnostic methods, the diagnosis was established in 100% of cases (89 patients) through visual examination and slit-lamp biomicroscopy with mydriasis.

Regarding the duration of postoperative hospital stay, 91.01% of patients (81 patients) stayed only one day after surgery. A small percentage, 5.62% (5 patients), had a postoperative stay of 2-3 days, while 3.37% (3 patients) required three or more days of hospitalization.

Postoperative complications were observed in only 3.37% of patients, while 96.63% had no complications. This is very important for cost-effectiveness for the patient and clinic. Other studies have shown the importance of the economic issue in healthcare services [11],[12], [13].

Postoperative pain was reported in all 89 cases. Clinical presentation varied, with most patients experiencing mild pain, but some reporting moderate pain. Based on the numeric pain rating scale, 87.64% (78 patients) were assessed as having mild pain, while 12.36% (11 patients) were classified as experiencing moderate pain. This means that patients' satisfaction with the clinic service was good. Other studies in Albania have investigated patients' satisfaction with healthcare services [14], [15], [16].

6. Conclusions

The study concluded that cataracts are most observed in males aged 66-71 years and rarely encountered in males under 50. The study concluded that cataracts are most frequently found in females aged 66-71 years and rarely seen in females under 50. The most common comorbidities associated with cataracts are arterial hypertension and type 2 diabetes mellitus. The diagnostic method through which the diagnosis is established is visual acuity testing and slit-lamp biomicroscopy with mydriasis. The study found that most patients undergoing cataract surgery have a postoperative hospital stay of only one day. This indicates that the likelihood of postoperative surgical complications with this treatment is minimal, and recovery is faster. The study concluded that postoperative complications are rare in cataract surgery. Postoperative pain following cataract surgery is mild in most patients, making this surgical intervention more comfortable for the patient.

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