CODEN [USA]: IAJPBB ISSN: 2349-7750

INDO AMERICAN JOURNAL OF
PHARMACEUTICAL SCIENCES

http://doi.org/10.5281/zenodo.1286237

Available online at: http://www.iajps.com Research Article

A CRITICAL ANALYSIS OF CATARACT SURGERY AND FREQUENCY OF POST-OPERATIVE COMPLICATIONS WITHIN SPECIFIED TIME

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Abstract:

Introduction: *Cataract is clouding of the lens of the eye or its capsule that can impair vision. Cataracts are the most common cause of vision loss in people over age 40 and are the principal cause of blindness in the world. In fact, there are more cases of cataracts worldwide than there are of glaucoma, macular degeneration and diabetic retinopathy combined, according to Prevent Blindness America (PBA). An area around embryonic nucleus becomes opacified and two rings of opacity are seen. The opacity is sharply demarked and the area of the lens within and around the opacity is clear. Linear opacities or riders may run towards the equator.*

Purpose: *Over the past several decades, there have been many advances in the equipment, instrumentation and techniques of performing cataract surgery. This review will address the impact of these advances on the safety profile of cataract surgery.*

Objective: *To know the frequency of post-operative complications within 48 hours of cataract surgery in a private eye hospital.*

Study design: *Descriptive cross-sectional survey. Study population: Post-operative cataract patients. Setting: Private eye hospital. Sample size: 128 post-operative cataract patients. Sampling technique: Non-probability purposive sampling, AII patients selected were of age 20+, Patients were selected irrespective of sex, education status. Patients who were suffering from any chronic illness/disease were excluded.*

Data collection procedure: *Literature review on the post-operative complications of cataract surgery, A Pre-tested questionnaire was used as data collection tool.*

Data analysis: *Collected data was entered into a statistical software SPSS 19. Descriptive Statistics - frequency, percentage, mean, standard deviation were calculated.*

Results: *Frequency of complications within 48 hours of cataract surgery was found to be 23 out of 128 (18%). The most frequent complication was corneal edema 13 (10.1%), the second most frequent complication was striate keratopathy 7 (5.46%) two cases were having mild to moderate inflammation (2.56%) and only one case was having leaking wound (0.78%).*

Conclusion: *When diabetic retinopathy (DR) is not in a proliferative phase it should not be regarded as a contraindication to modern cataract surgery. Neither lens fluorescence nor BAB is valuable as a risk indicator for postoperative progression of DR.*

Keywords: *frequency, post-operative complications, 48 hours, cataract surgery, private eye hospital.*

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Please cite this article in press Saman Shahzad et al., ***A Critical Analysis of Cataract Surgery and Frequency of Post-Operative Complications within Specified Time,*** *Indo Am. J. P. Sci, 2018; 05(06).*

INTRODUCTION:

Cataract is clouding of the lens of the eye or its capsule that can impair vision. Cataracts are the most common cause of vision loss in people over age 40 and are the principal cause of blindness in the world. In fact, there are more cases of cataracts worldwide than there are of glaucoma, macular degeneration and diabetic retinopathy combined, according to Prevent Blindness America (PBA). **A sub capsular cataract** occurs at the back of the lens. People with diabetes or those taking high doses of steroid medications have a greater risk of developing a subcapsular cataract. **A nuclear cataract** forms deep in the central zone (nucleus) of the lens. Nuclear cataracts usually are associated with aging. **A cortical cataract** is characterized by white, wedge-like opacities that start in the periphery of the lens and work their way to the center in a spoke-like fashion. This type of cataract occurs in the lens cortex, which is the part of the lens that surrounds the central nucleus. An area around embryonic nucleus becomes opacified and two rings of opacity are seen. The opacity is sharply demarked and the area of the lens within and around the opacity is clear. Linear opacities or riders may run towards the equator.

LITERATURE REVIEW

Over the past several decades, there have been many advances in the equipment, instrumentation and techniques of performing cataract surgery. This review will address the impact of these advances on the safety profile of cataract surgery. Recent studies have demonstrated a decline in the risk of serious postoperative adverse events (endophthalmitis, suprachoroidal hemorrhage, retinal detachment) following cataract surgery. Factors that increase the risk of serious complications from cataract surgery include patient-related factors (male, sex, concomitant diabetic retinopathy, same day cataract surgery combined with another intraocular surgery, tamsulosin use) and surgeon-related factors (low surgical volume, limited experience, operating on patients who are most prone to adverse events). Cataract surgery continues to be a very well tolerated surgical procedure with few patients experiencing serious sight-threatening adverse events. Studies in the literature have helped surgeons identify patients who are at high risk for surgical complications and develop strategies to limit surgical complications when operating on these patients. As multifocal intraocular lenses, femtosecond laser technology, and other surgical innovations continue to gain popularity, it will be interesting in the coming years to determine whether there will be a continued reduction in complications of cataract surgery.

This study presents an evaluation of cataract surgery on the diabetic patients. One experienced surgeon carried out phaco emulsification on all subjects and the same surface-coated one-piece PMMA-lens-type was implanted. The lens fluorescence and the blood-aqueous barrier (BAB) were then evaluated as experimental preoperative risk indicators.

Diabetes mellitus influences the function and morphology of the eye lens. The cataract is the second most common complication of diabetes mellitus on the eye. A hundred patients with cataract were examined in the prospective study.

The patients were divided into two groups. The first group consisted of 50 patients with cataract who had not suffered from a system or local disease. The second group consisted of 50 patients with cataract and diabetes mellitus that had lasted for at least five years. In both groups the patients underwent identical cataract extra capsular extraction with intraocular PMMA (polymethylmethacrylate) lens implantation in camera posterior.

The objective of this study was to compare the two groups of patients in order to find out the most common intraoperative or postoperative complications in diabetics. The most common postoperative complications in patients suffering from diabetes were inflammatory reactions and bleeding: postoperative keratopathy, uveitis anterior serous and uveitis anterior fibrinous with posterior sinechia and opacity of the posterior lens capsule as results.

Postoperative visual acuity was worse in the patients in group II on the seventh day and six months after operation. It was diabetic retinopathy and its progression that caused deterioration of visual acuity. Diabetic retinopathy and its progression, as well as maculopathy were found only in patients who were not treated with photocoagulation before the operation.

RESULTS:

Sample size……128
Males……71 (55.5%)
Females……57 (44.5%)

- A total of 140 patients were to be followed but only 128 were included in study while the follow up data of 12 were not available
- 4.1 Descriptive results:
- All the patients selected for the sample were above 20 years of age. Number of patients between age 21-40 were 19 (14.8%), from 41-60 years of age were 67(52.3%), those between 61-80 were 38(29.7%) and those

above 80 were only 4(3.1%). Table 4.2.1, Fig 4.2.1

- 71 (55.5%) of participants were males and 57 (44.5%) were females. Table 4.2.2, Fig 4.2.2
- 117 (91.4%) were married, 8 (6.3%) were single, 1 (0.8%) divorced, 2 (1.6%) separated. Table 4.2.3, Fig 4.2.3
- All the participants were Muslims.
- 93 (72.7%) patients were non-diabetic, 35 (27.3%) were non-diabetic. Table 4.2.4, Fig 4.2.4
- Pre-operative distant visual acuity in the right eye were 6/6- 6/12 in 20 (15.6%) patients, 6/18- 6/36 in 40 (31.3%), 6/60- 3/60 in 17 (13.3%), <3/60- HM in 31 (24.2%), PL in 18 (14.1%), NPL in only 2 (1.6%) of patients. Table 4.2.5, Fig 4.2.5
- Pre-operative distant visual acuity in the left eye were 6/6- 6/12 in 21 (16.4%), 6/18- 6/36 in 39 (30.5%), 6/60- 3/60 in 21 (16.4), <3/60- HM in 37 (28.9%), PL in 10 (7.8) of patients. Table 4.2.6, Fig 4.2.6
- Pre-operative near visual acuity in the right eye were N6- N12 in 39 (30.5%), N14- N18 in 64 (50%), <N18 in 25 (19.5%) of patients. Table 4.2.7, Fig 4.2.7
- Pre-operative near visual acuity in the left eye were N6-N12 in 38 (29.7%), N14-N18 in 65 (50.58%), <N18 in 25 (19.5%) of patients. Table 4.2.8, Fig 4.2.8
- 94 (73.4%) of patients were diagnosed by consultants and 34 (26.6%) of patients were diagnosed be resident medical officers. Table 4.2.9, Fig 4.2.9
- 118 (92.2%) of patients were operated by consultants and 10 (7.8%) were operated by resident medical officers. Table 4.2.10, Fig 4.2.10
- 96 (75%) of patients were having no post-operative complication within 24 hours of surgery, 23 (18%) of patients were having post-operative complications data of 9 (7%) patients were not available. Table 4.2.11, Fig 4.2.11
- Corneal edema in 13 (56.5%), striate keratopathy in 7 (30.4%), moderate inflammation in 2 (8.6%), leaking wound were present in 1 (4.3%) of all complicated patients. Table 4.2.12, Fig 4.2.12
- Frequency of complications in age group 21-40 were 2 (8.7%), 61-80 were 5 (21.7%). Table 4.2.13, Fig 4.2.13
- Frequency of complications in male were 15 (65.2%), and females 8 (35.8%). Table 4.2.14, Fig 4.2.14
- 22 (95.7%) of complicated cases were non-diabetic, only 1 (4.3%) were diabetic. Table 4.2.15, Fig 4.2.15
- Pre-operative distant visual acuity in the right eye of the complicated patients were as follow:
- 6/6-6/12 in 3 (13%) patients, 6/18- 6/36 in 7 (30%), 6/60- 3/60 in 6 (26.1%), <3/60- HM in 6 (26.1%), NPL in only 1 (4.3%) of patients. Table 4.2.16, Fig 4.2.16
- Pre-operative distant visual acuity in the left eye of the complicated patients were as follow:
- 6/6-6/12 in 4 (17.4%), 6/18- 6/36 in 3 (13%), 6/60- 3/60 in 6 (26.1), <3/60- HM in 9 (39.1%), PL in 1 (4.3) of patients. Table 4.2.17, Fig 4.2.17
- Pre-operative near visual acuity in the right eye of the complicated patients were as follow:
- N6- N12 in 8 (34.8%), N14- N18 in 13 (56.5%), <N18 in 2 (8.7%) of patients. Table 4.2.18, Fig 4.2.18
- Pre-operative near visual acuity in the left eye of the complicated patients were as follow:
- N6- N12 in 6 (26.1%), N14- N18 in 13 (56.5%), <N18 in 4 (17.4) of patients. Table 4.2.19, Fig 4.2.19
- Total number of operations done by RMOs were 10, complications were absorbed in 3 (30%) cases and the total number of surgeries done by consultants were 118, complications were absorbed 20 (16.9%). Table 4.2.10, Fig 4.2.10, Fig 4.2.20, Fig 4.2.21

4.2 Tabulated and Graphical Representation of the results:

Table 4.2.1: Age of the patients

Age	Frequency	Percent	Valid Percent	Cumulative Percent
21 - 40	19	14.8	14.8	14.8
41 - 60	67	52.3	52.3	67.2
Valid 61 - 80	38	29.7	29.7	96.6
> 80	4	3.1	3.1	100
Total	128	100	100	

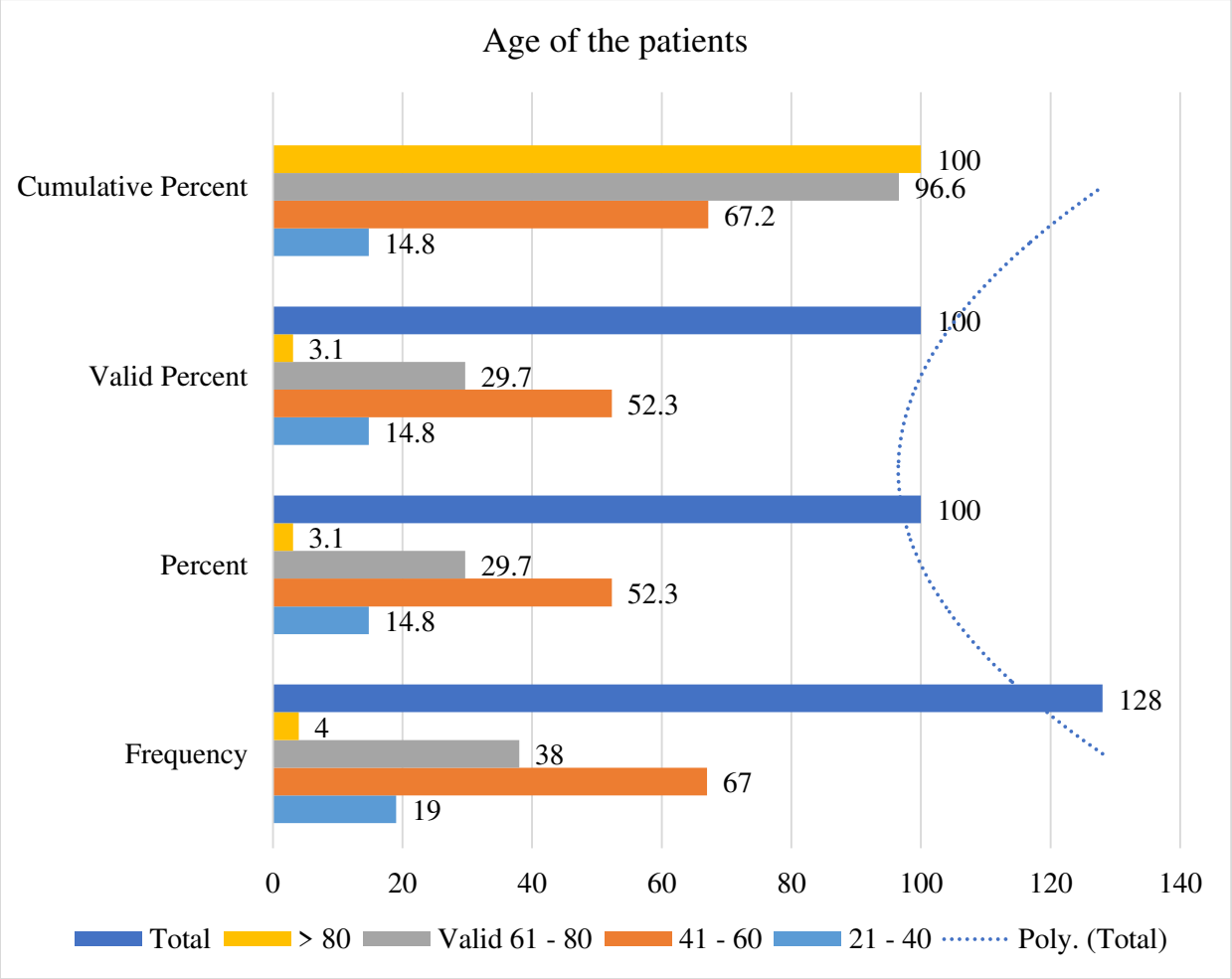


Table 4.2.2: Gender of the patients

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	71	55.5	55.5	55.5
Valid Female	57	44.5	44.5	100
Total	128	100	100	

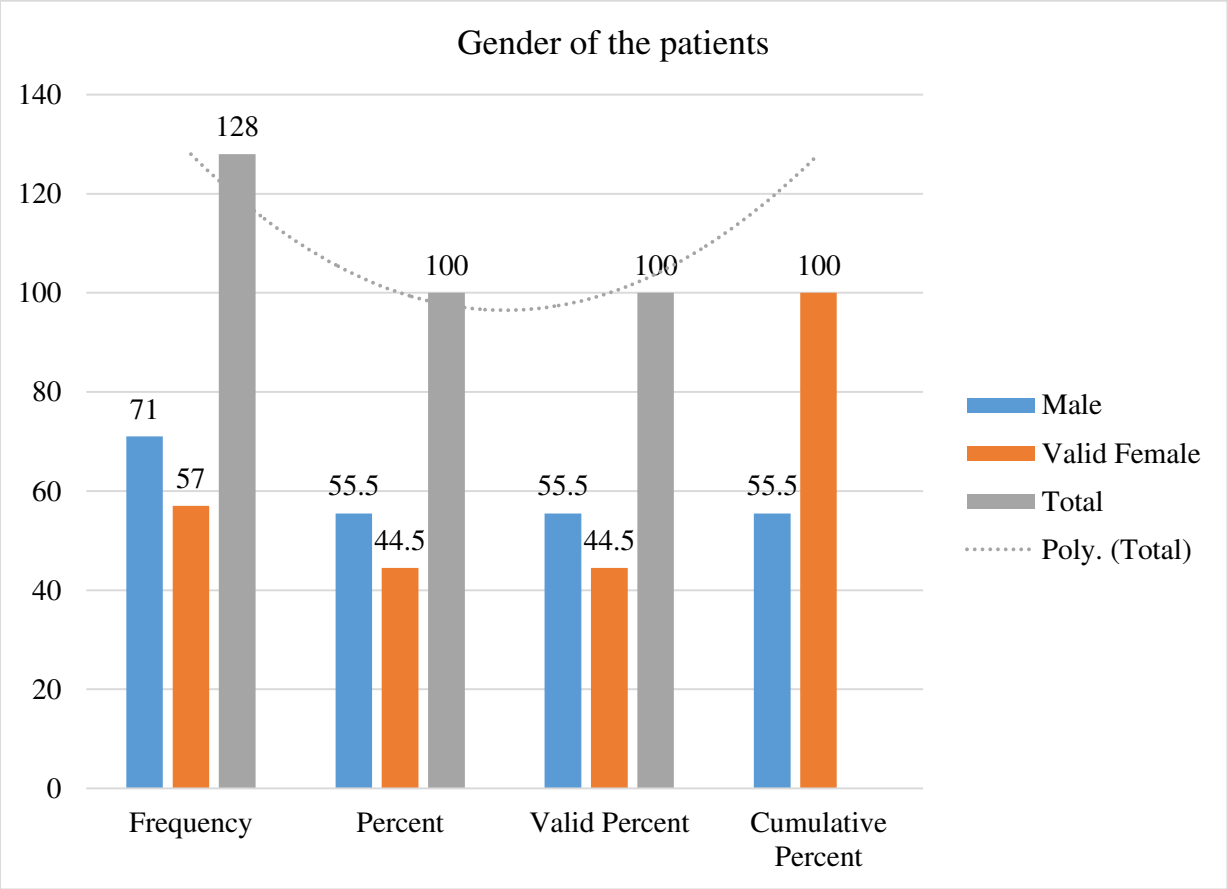


Table 4.2.3: Marital status of the patients

Marital Status	Frequency	Percent	Valid Percent	Cumulative Percent
Single	8	6.3	6.3	6.3
Married	117	91.4	91.4	97.7
Valid Divorced	1	0.8	0.8	98.4
Separated	2	1.6	1.6	100
Total	128	100	100	

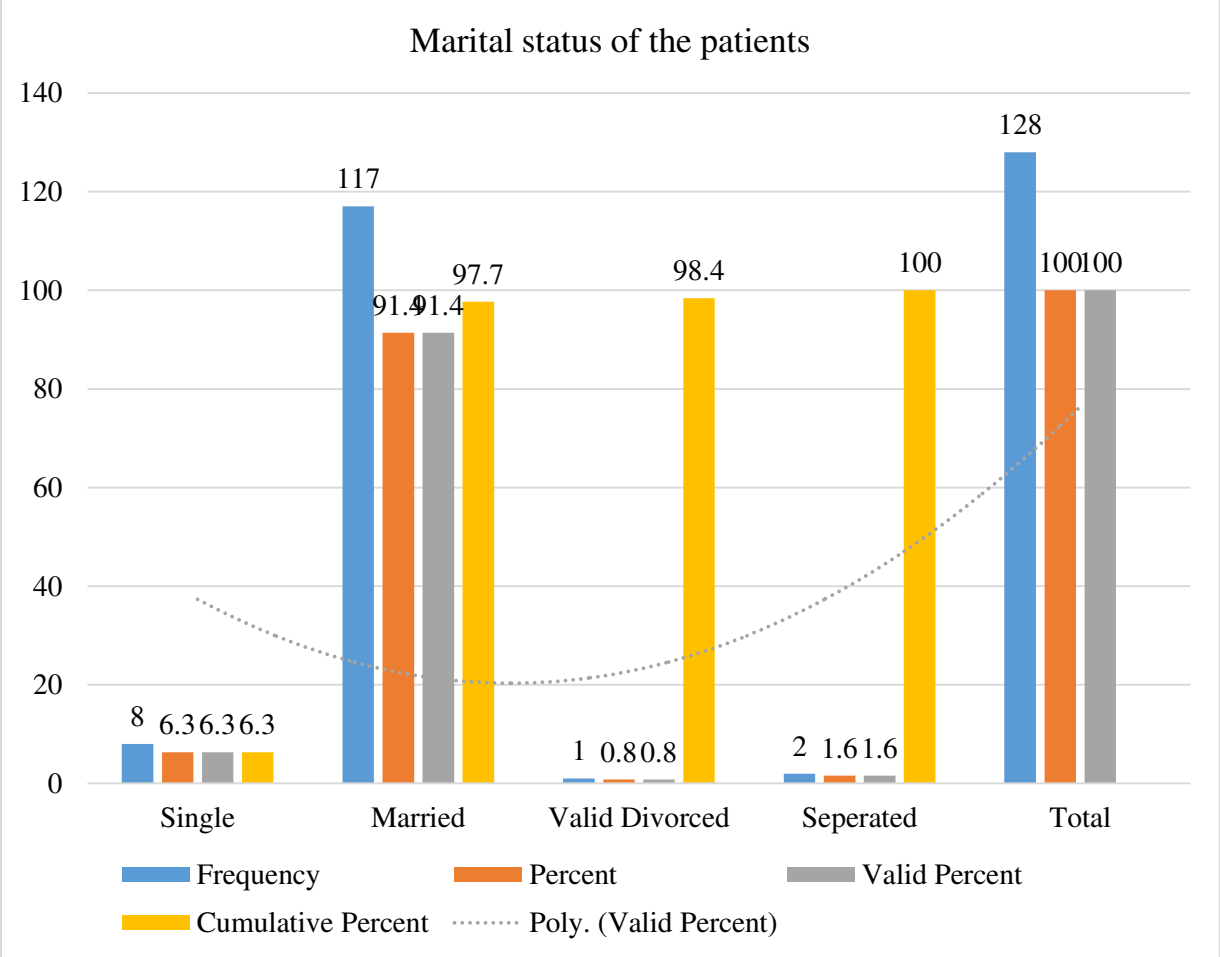


Table 4.2.4: Diabetic status of the patients

Diabetic Status	Frequency	Percent	Valid Percent	Cumulative Percent
Non-diabetic	93	72.7	72.7	72.7
Valid Diabetic	35	27.3	27.3	100
Total	128	100	100	

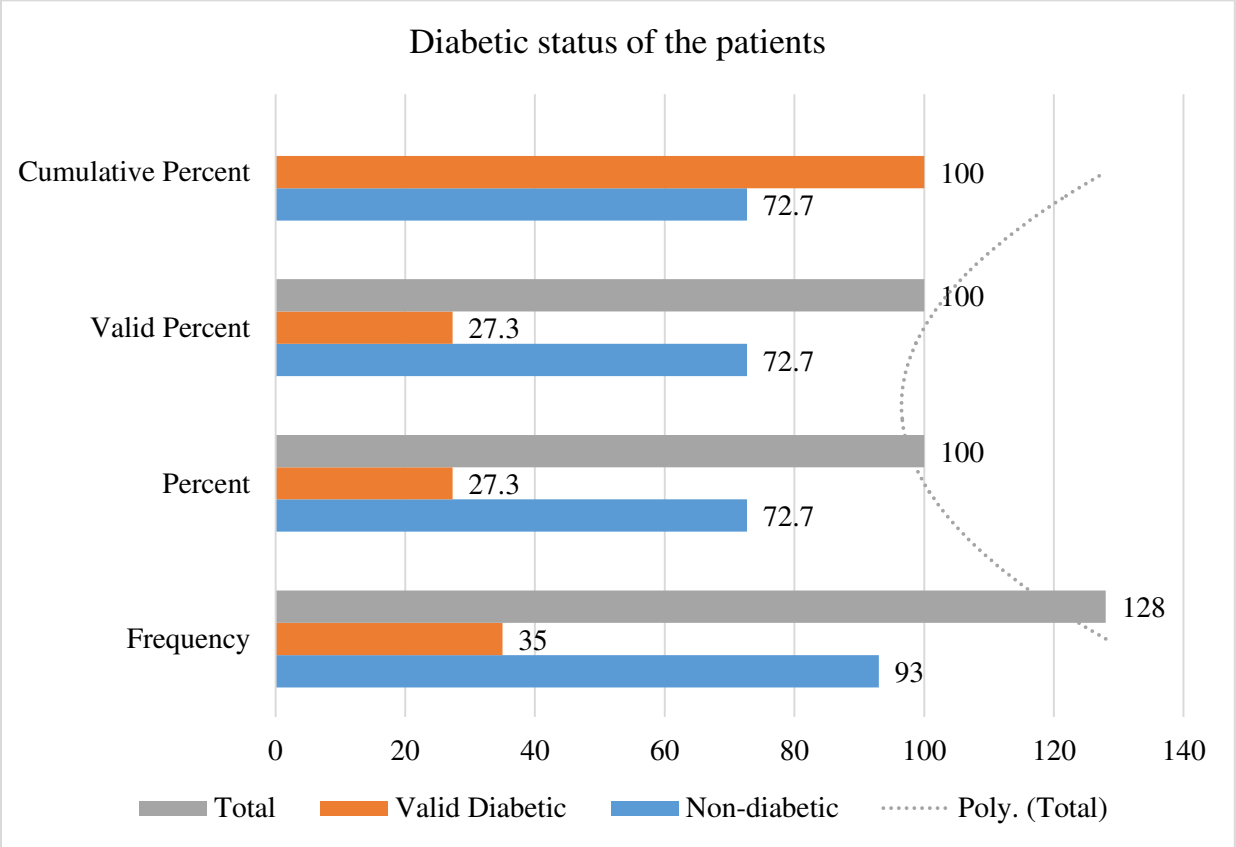


Table 4.2.5: Pre-operative distant visual acuity in right eye

Right Eye	Frequency	Percent	Valid Percent	Cumulative Percent
6/6 - 6/12	20	15.6	15.6	15.6
6/18 / 6/36	40	31.3	31.3	46.9
6/60 / 3/60	17	13.3	13.3	60.2
Valid < 3/60 - HM	31	24.2	24.2	84.4
PL	18	14.1	14.1	98.4
NPL	2	1.6	1.6	100
Total	128	100	100	

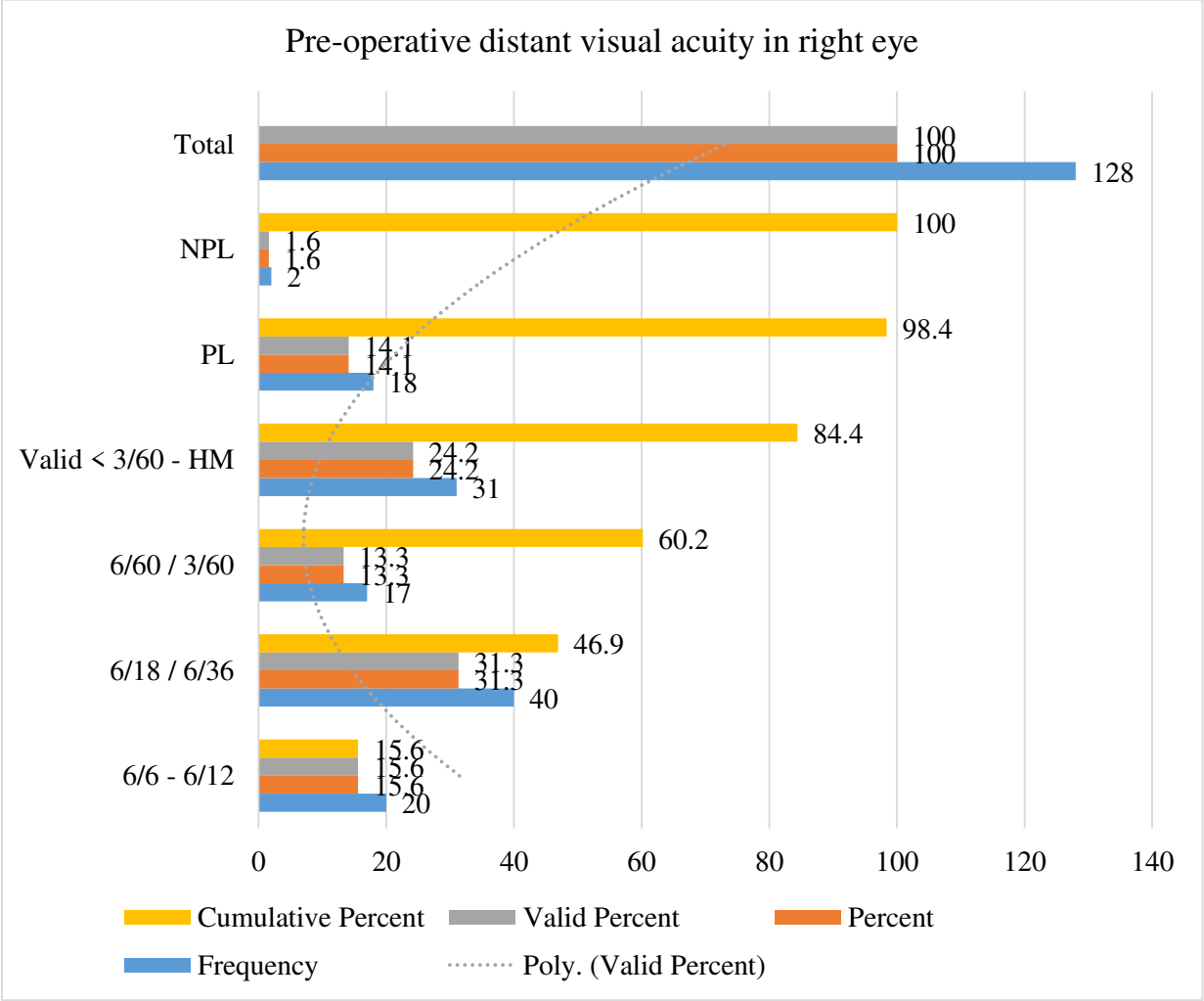


Table 4.2.6: Pre-operative distant visual acuity in left eye

Left Eye	Frequency	Percent	Valid Percent	Cumulative Percent
6/6 - 6/12	21	16.4	16.4	16.4
6/18 / 6/36	39	30.5	30.5	46.9
6/60 / 3/60	21	16.4	16.4	63.3
Valid < 3/60 - HM	37	28.9	28.9	92.2
PL	10	7.8	7.8	100
Total	128	100	100	

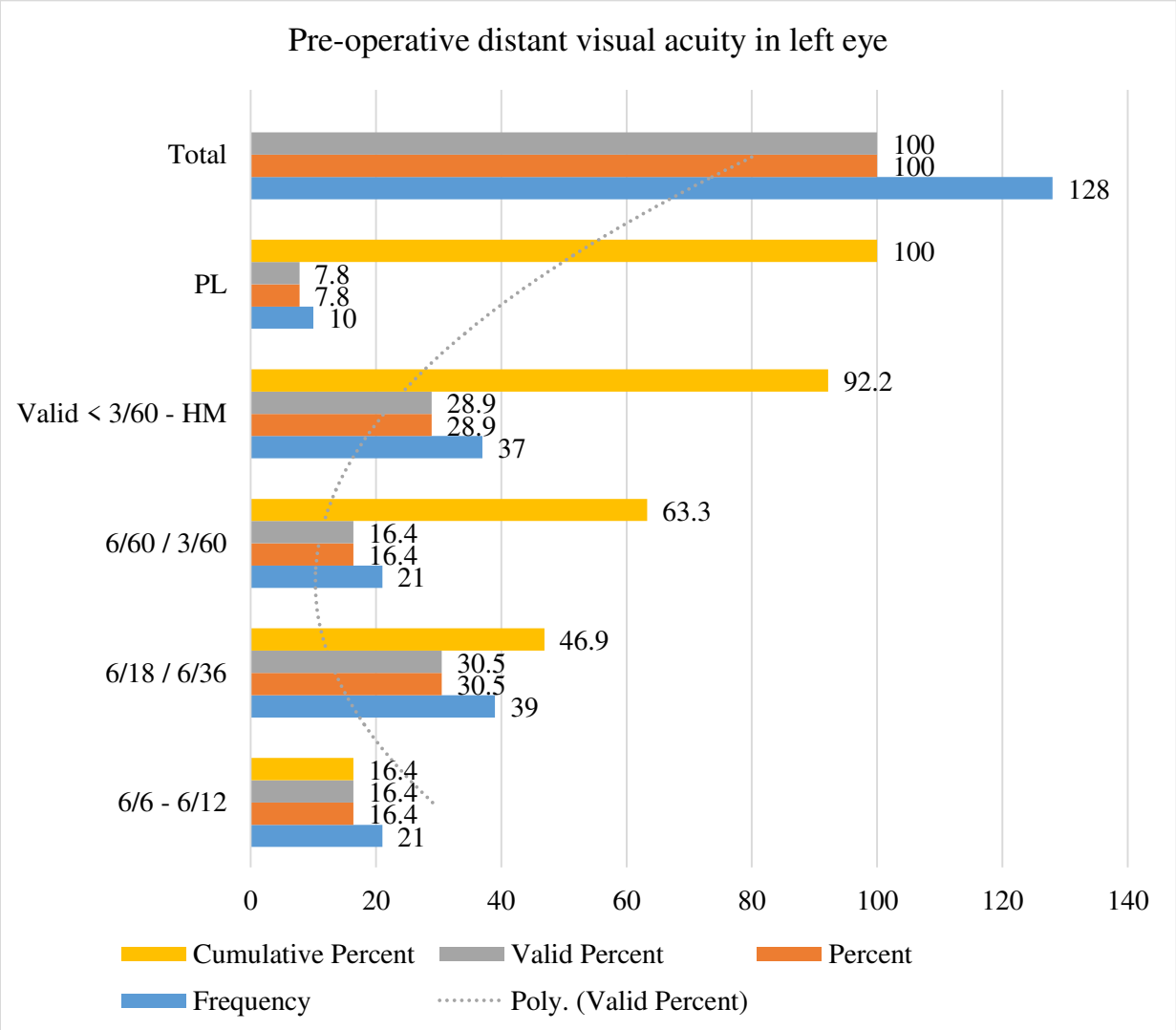


Table 4.2.7: Pre-operative near visual acuity in right eye

Near Visual	Frequency	Percent	Valid Percent	Cumulative Percent
N6 - N12	39	30.5	30.5	30.5
N14 - N18	64	50	50	80.5
Valid < N18	25	19.5	19.5	100
Total	128	100	100	

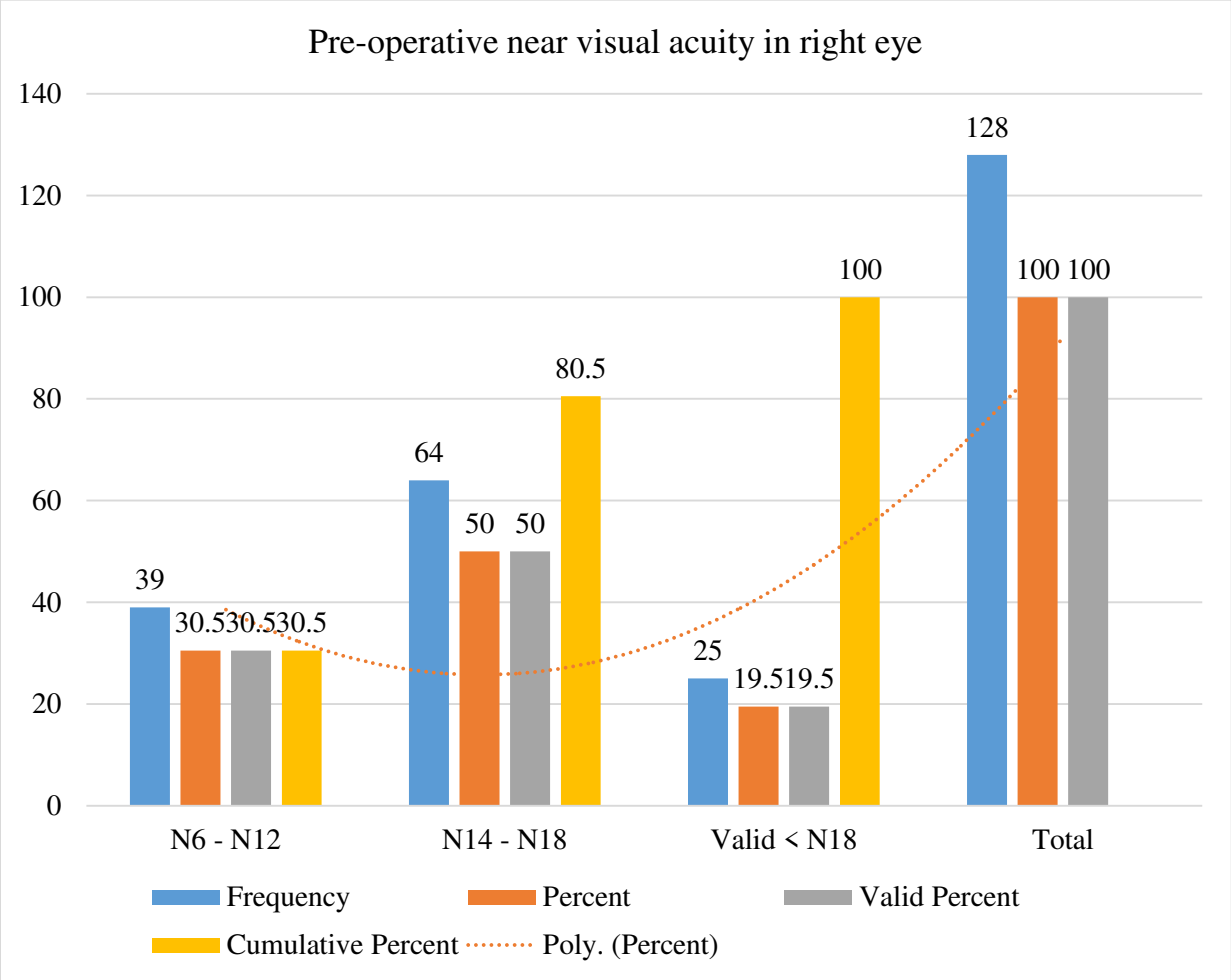


Table 4.2.8: Pre-operative near visual acuity in left eye

Near Visual	Frequency	Percent	Valid Percent	Cumulative Percent
N6 - N12	38	29.7	29.7	29.7
N14 - N18	65	50.8	50.8	80.5
Valid < N18	25	19.5	19.5	100
Total	128	100	100	

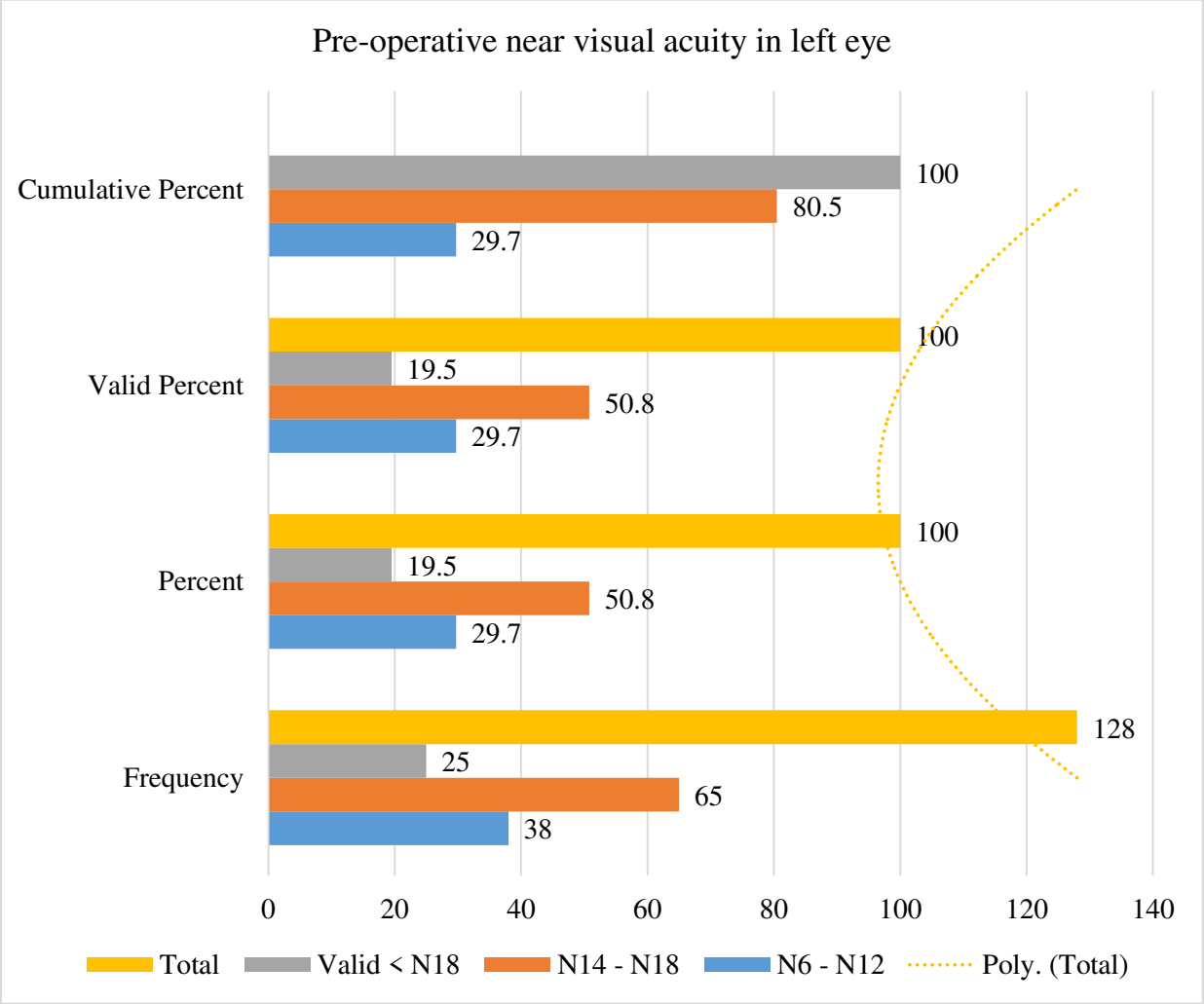


Table 4.2.9: Diagnosis made by

Diagnosed By	Frequency	Percent	Valid Percent	Cumulative Percent
RMO	34	226.6	26.6	26.6
Valid Consultant	94	73.4	73.4	100
Total	128	100	100	

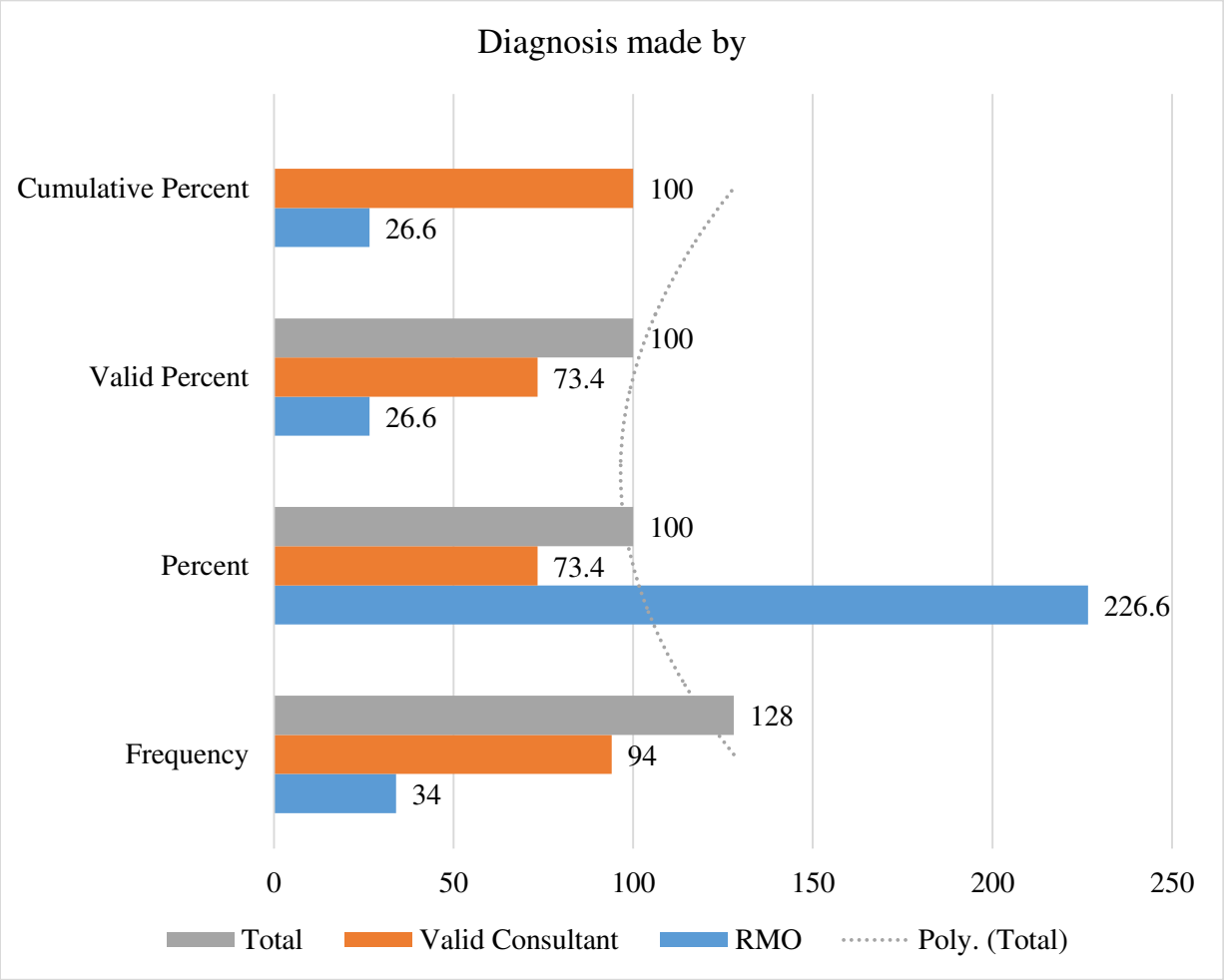


Table 4.2.10: Surgery performed by

Surgery By	Frequency	Percent	Valid Percent	Cumulative Percent
RMO	10	7.8	7.8	7.8
Valid Consultant	118	90.2	92.2	100
Total	128	100	100	

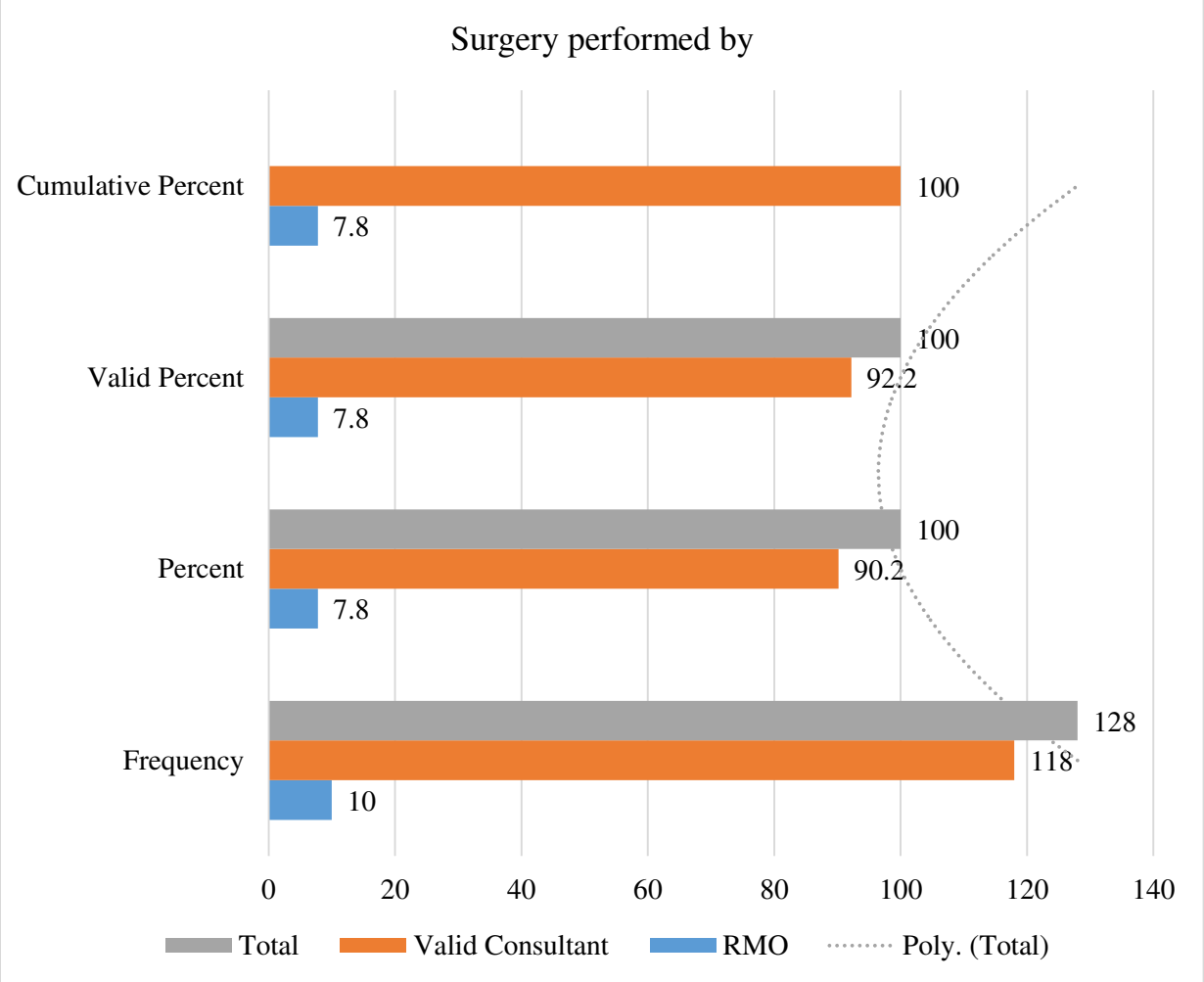


Table 4.2.11: Any post-operative complications

Complications	Frequency	Percent	Valid Percent	Cumulative Percent
No	96	75	75	75
Yes	23	18	18	93
Valid Don't Know	9	7	7	100
Total	128	100	100	

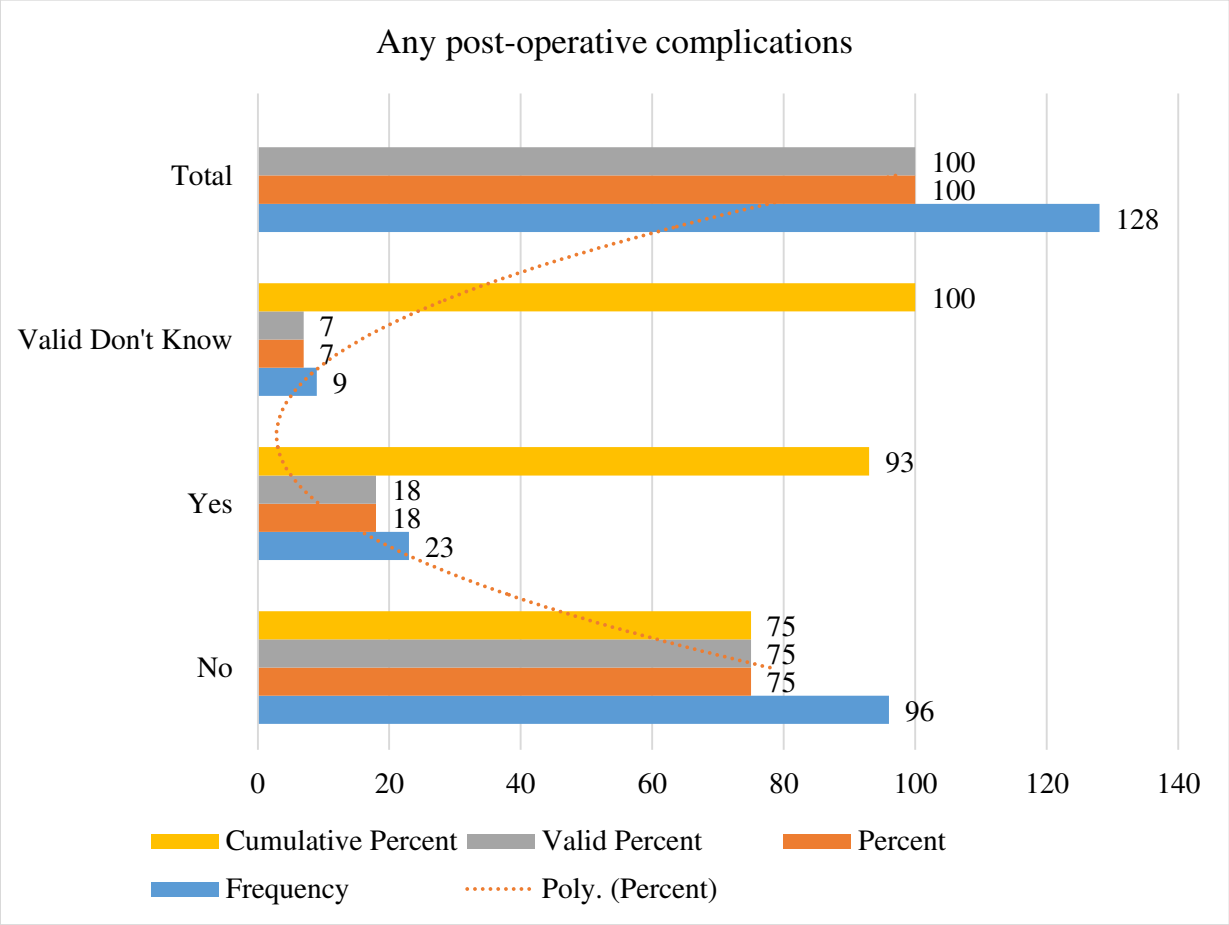


Table 4.2.12: Post-operative complications

Post-Operative Complications	Frequency	Percent
Corneal edema	13	56.5
Striate Keratopathy	7	30.4
Valid Moderate Inflammation	2	8.6
Leaking wound	1	4.3
Total	23	100

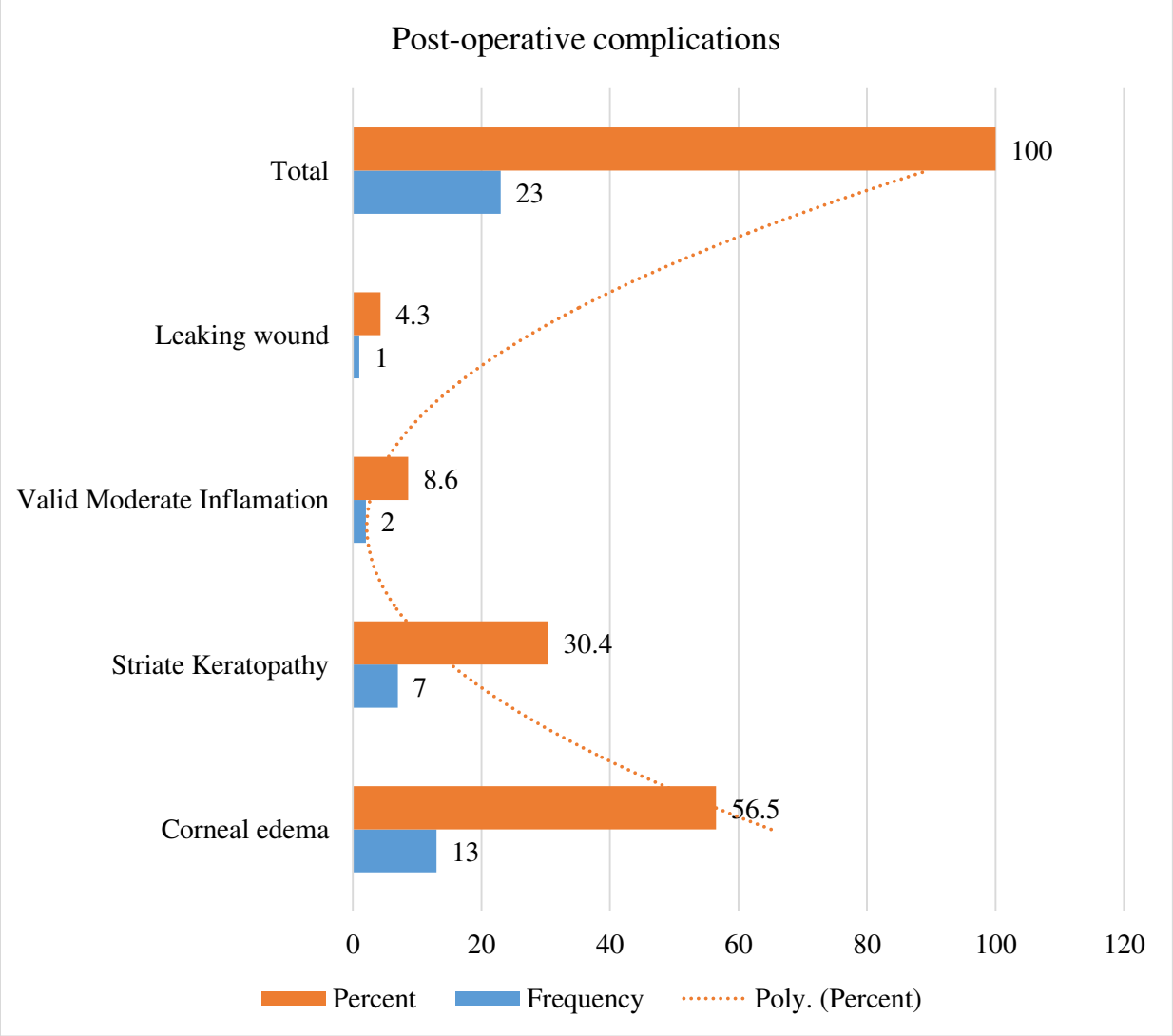


Table 4.2.13: Age of complicated patients

Age	Frequency	Percent	Valid Percent	Cumulative Percent
21 - 40	2	8.7	8.7	8.7
41 - 60	16	69.6	69.6	78.3
Valid 61 - 80	5	21.7	21.7	100
Total	23	100	100	

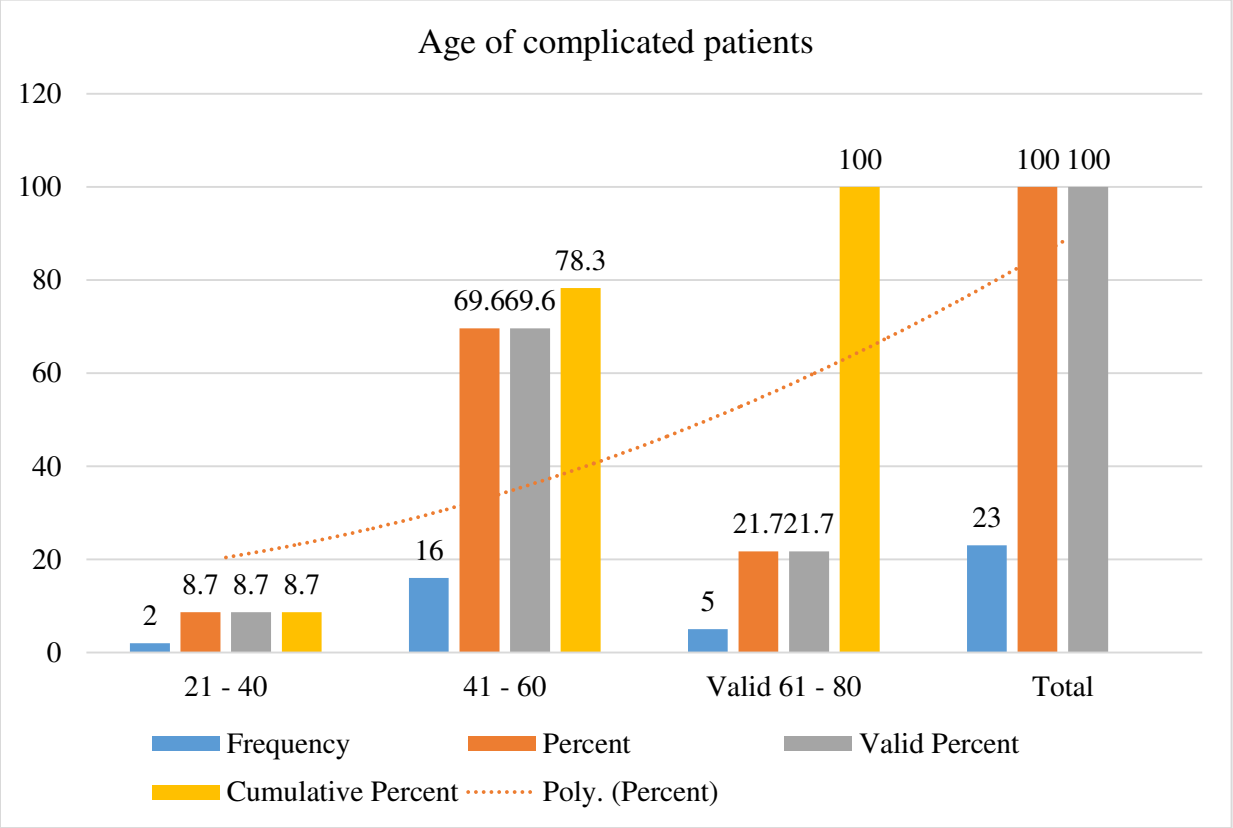


Table 4.2.14: Gender of complicated patients

Gender	Frequency	Percent	Valid Percent	Cumulative Percent
Male	15	65.2	65.2	65.2
Valid Female	8	34.8	34.8	100
Total	23	100	100	

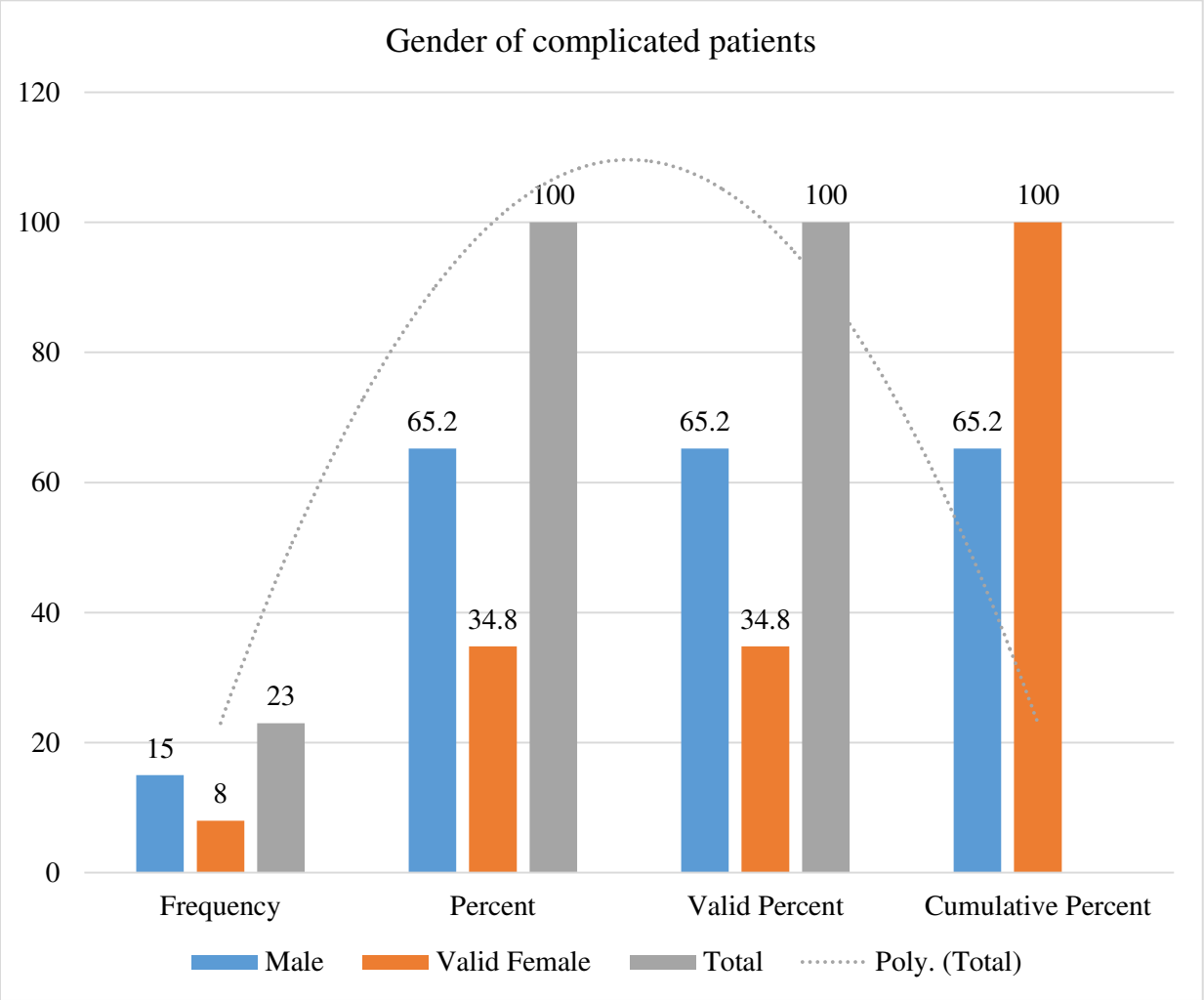


Table 4.2.15: Diabetic status of complicated patients

Diabetic Status	Frequency	Percent	Valid Percent	Cumulative Percent
Non-diabetic	22	95.7	9.7	95.7
Valid Diabetic	1	4.3	4.3	100
Total	23	100	100	

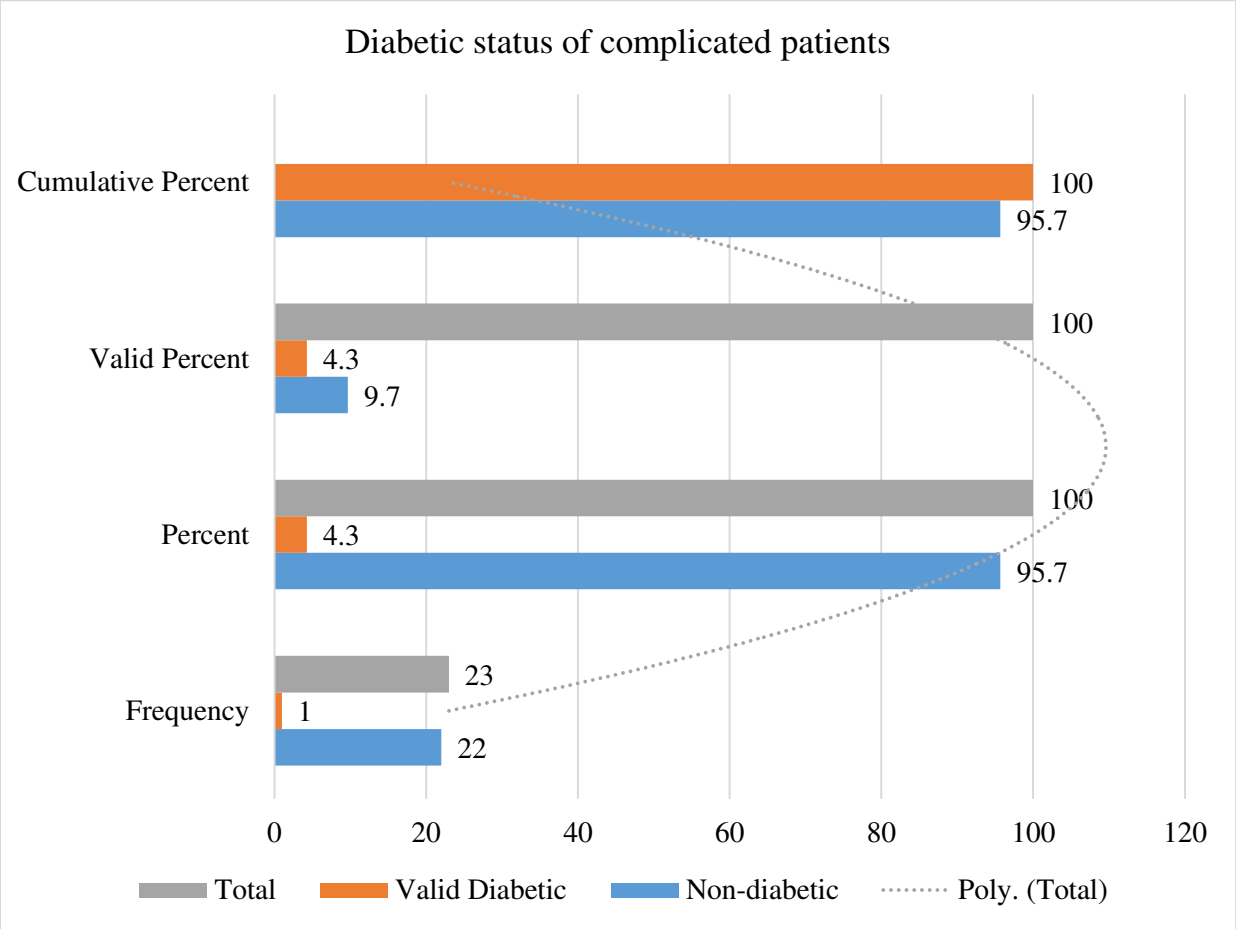


Table 4.2.16: Pre-operative distant visual acuity in right eye of complicated patients

Right Eye	Frequency	Percent	Valid Percent	Cumulative Percent
6/6 - 6/12	3	13	13	13
6/18 / 6/36	7	30.4	30.4	43.5
6/60 / 3/60	6	26.1	26.1	69.6
Valid < 3/60 - HM	6	26.1	26.1	95.7
NPL	1	4.3	4.3	100
Total	23	100	100	

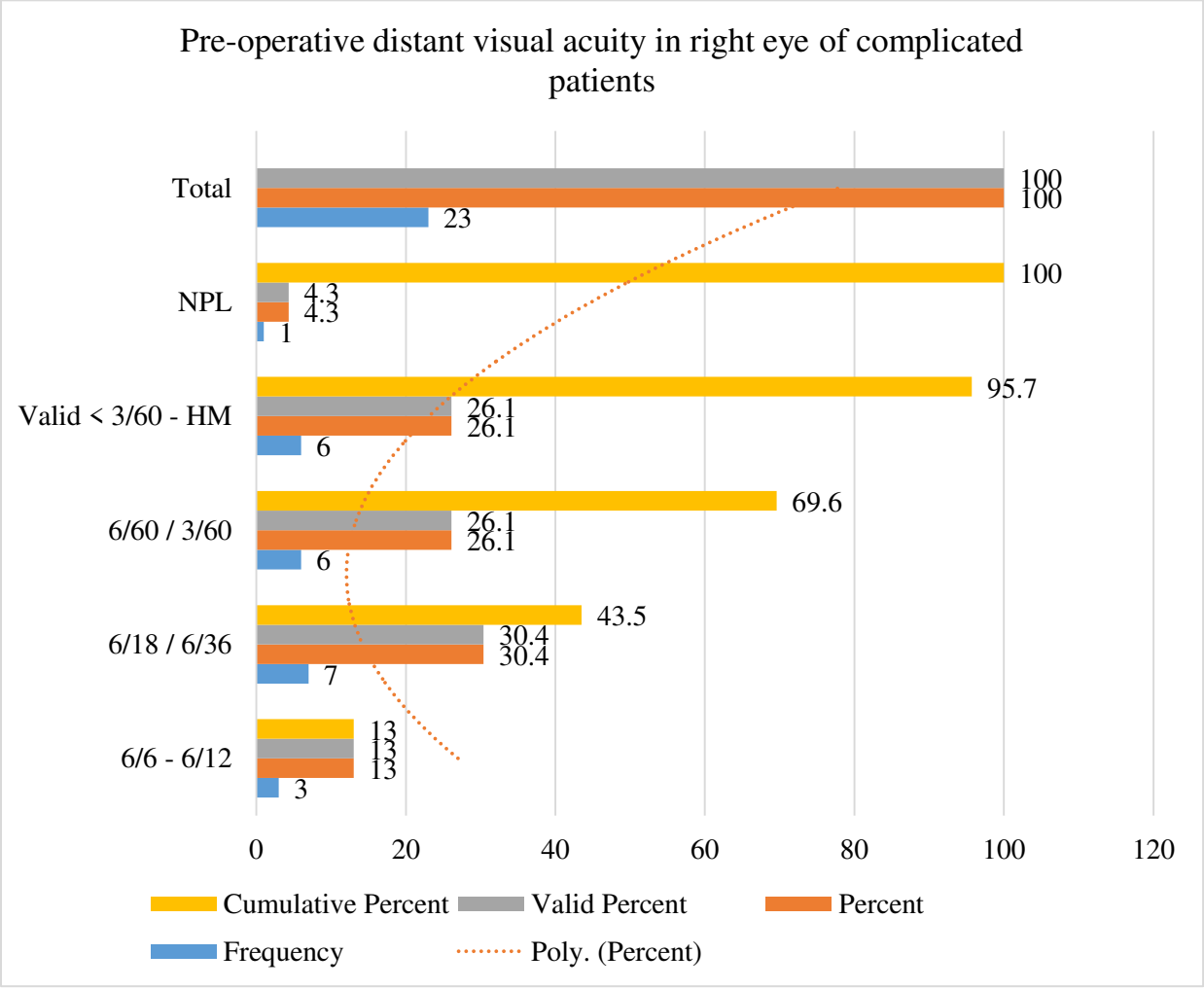


Table 4.2.17: Pre-operative distant visual acuity in left eye of complicated patients

Left Eye	Frequency	Percent	Valid Percent	Cumulative Percent
6/6 - 6/12	4	17.4	17.4	17.4
6/18 / 6/36	3	13	13	30.4
6/60 / 3/60	6	26.1	26.1	56.5
Valid < 3/60 - HM	9	39.1	39.1	95.7
PL	1	4.3	4.3	100
Total	23	100	100	

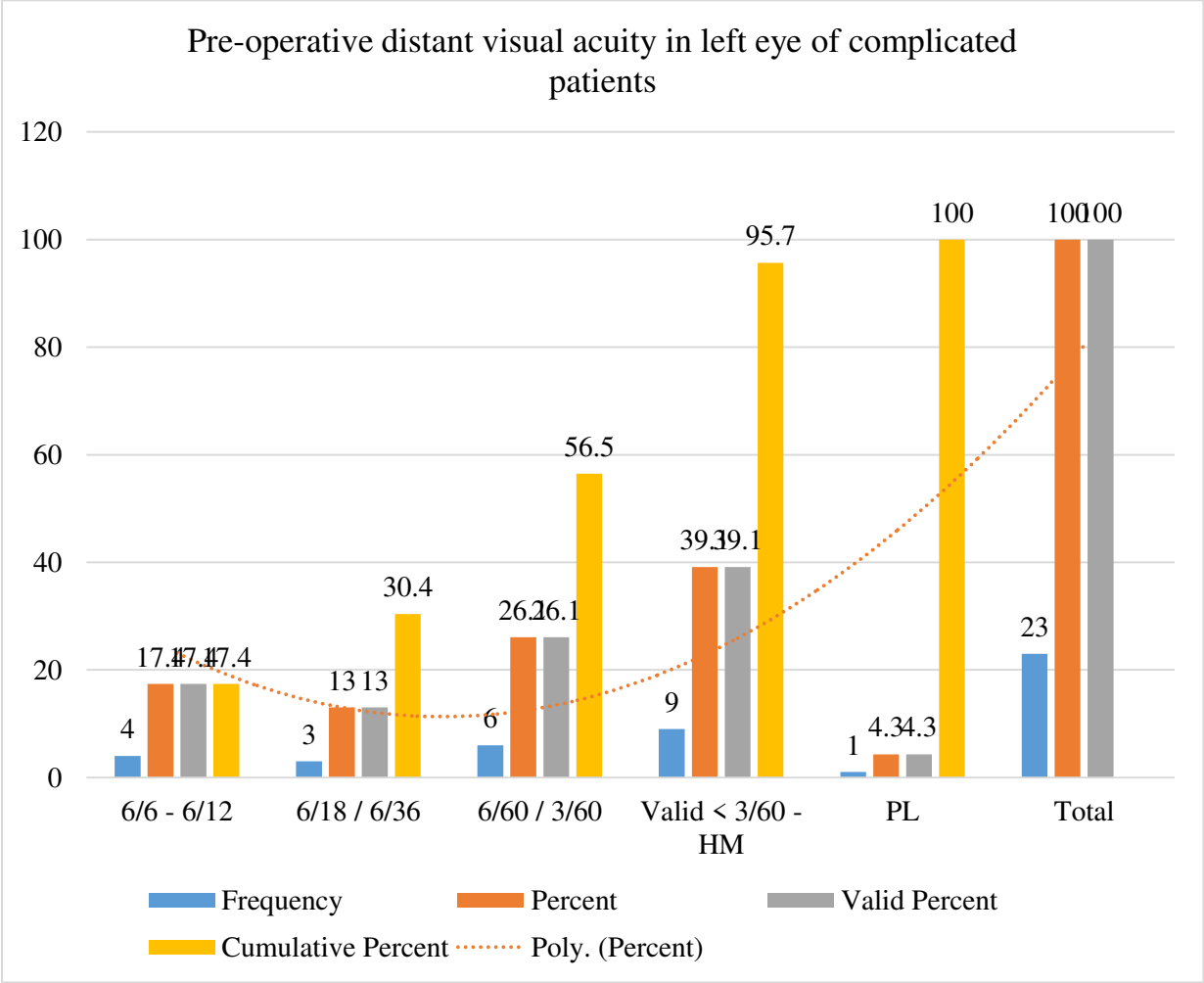


Table 4.2.18: Pre-operative near visual acuity in right eye of complicated patients

Near Visual	Frequency	Percent	Valid Percent	Cumulative Percent
N6 - N12	8	34.8	34.8	34.8
N14 - N18	13	56.5	56.5	91.3
Valid < N18	2	8.7	8.7	100
Total	23	100	100	

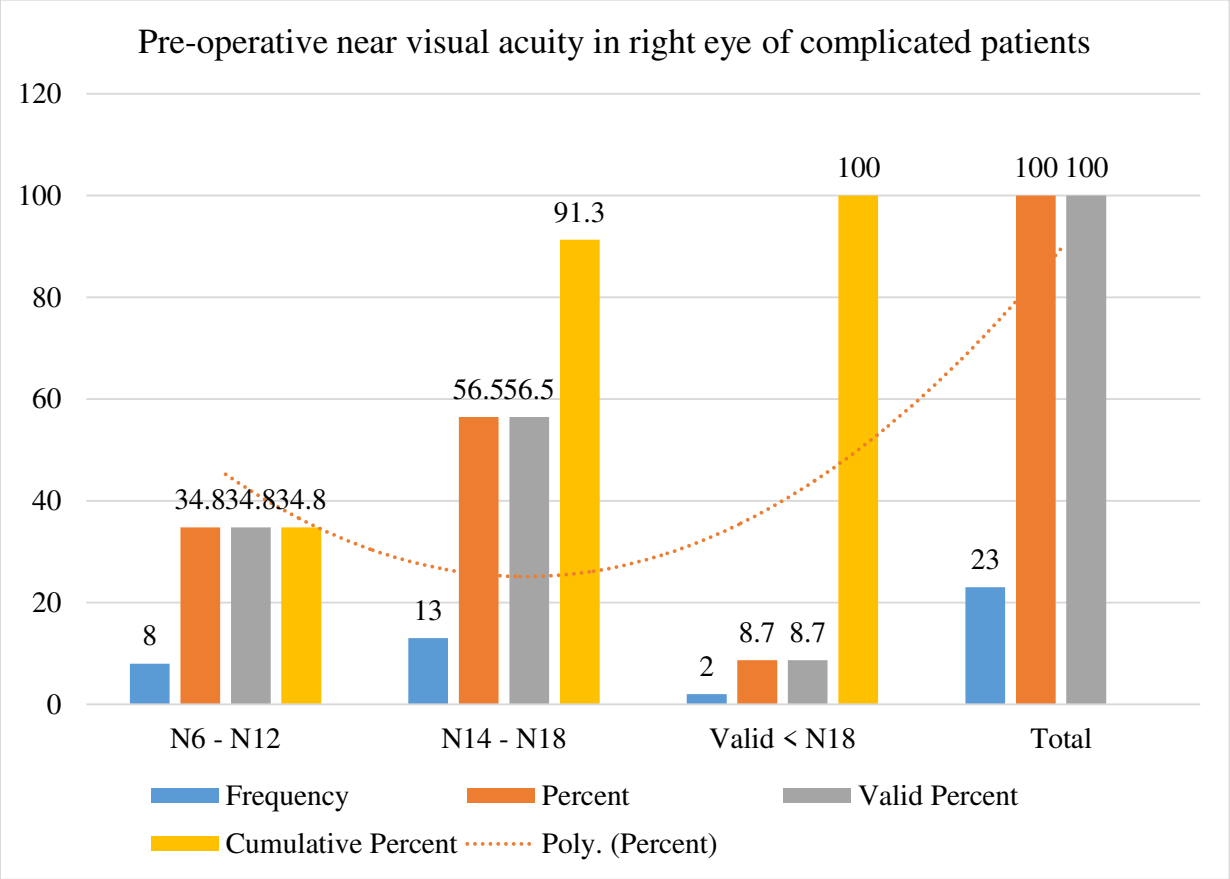
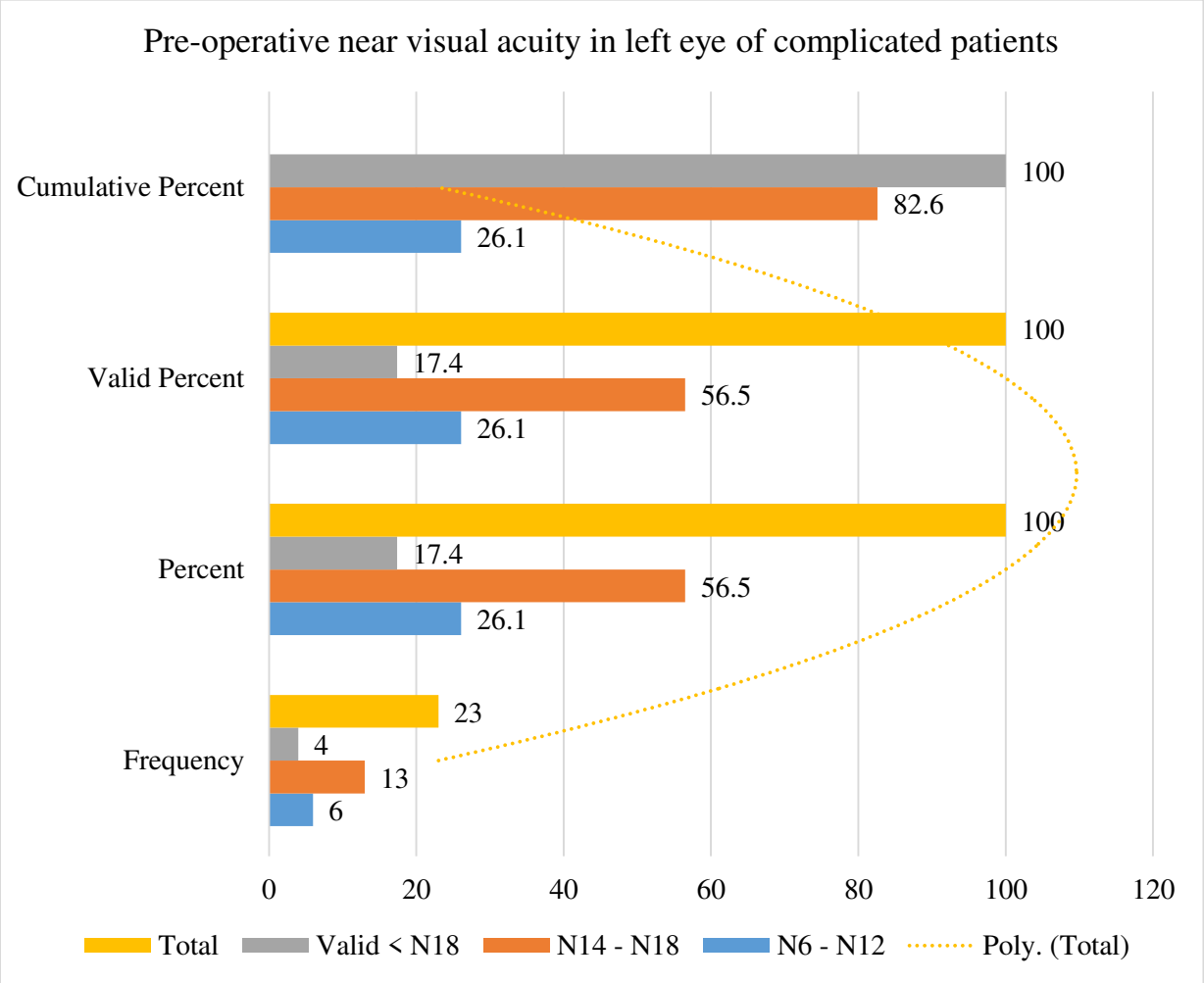


Table 4.2.19: Pre-operative near visual acuity in left eye of complicated patients

Near Visual	Frequency	Percent	Valid Percent	Cumulative Percent
N6 - N12	6	26.1	26.1	26.1
N14 - N18	13	56.5	56.5	82.6
Valid < N18	4	17.4	17.4	100
Total	23	100	100	



DISCUSSION:

Cataract is most common cause of blindness worldwide. Senile cataract is the most frequent variety which occurs usually above 50 years of age.

Surgery is the treatment of choice for cataract causing problems with vision, it is almost always curative and well tolerated but still it can result in some early and late complications.

Most commonly used techniques nowadays for removal of opaque lens are extra capsular lens extraction, phacoemulsification, a previously used technique intra capsular lens extraction is obsolete nowadays.

This study conducted was a descriptive cross-sectional survey to see the frequency of post-operative complications within 48 hours of surgery in a private eye hospital. A total of 128 post-operative cataract patients were selected in the sample out of which males were 71 (55.5%) and females were 57 (44.5%). The sampling technique used as non-probability purposive sampling including patients above 20 years of age irrespective of sex and educational status those with chronic illness were excluded. Study was conducted between January-

2014 to September-2014. Literature review on previous researches in this regard was done, a pre-tested questionnaire was developed as a data collecting tool, and observations were applied to methodology. Data was analyzed by IBM SPSS, Descriptive Statistics – frequency, percentage, mean, standard deviation were calculated.

Out of 128 patient's complications were observed in 23 patients (18%). Corneal edema was the most frequently observed complication which was observed in 13 (10.1%), striate keratopathy in 7 (5.46%), moderate inflammation in 2 (1.56%), leaking wound was present in 1 (0.78%) of all complicated patients.

Total number of complications in age group 21 – 40 were 2 (8.7%), in 41 – 60 were 16 (69.6%), 61 – 80 were 5 (21.7%).

Frequency of complications in male were 15 (65.2%), and females 8 (35.8%).
22 (95.7%) of complicated cases were non-diabetic, only 1 case (4.3%) was diabetic.

CONCLUSION:

Frequency of complications within 48 hours of cataract surgery was found to be 23 out of 128 (18%). The most frequent complication was corneal edema 13 (10.1%), the second most frequent complication was striate keratopathy 7 (5.46%) two cases were having mild to moderate inflammation (2.56%) and only one case was having leaking wound (0.78%).

REFERENCES:

1. Hwang DG, Smith RE, Corneal complications of cataract surgery, Refract Corneal Surg, 1991 Jan-Feb; 7 (1); 77-80, Review. PubMed PMID: 2043552.
2. McKellar MJ, Elder MJ. The early complications of cataract surgery; is routine review of patients 1 week after cataract extraction necessary? Ophthalmology. 2001 May; 108 (5); 930-5. PubMed PMID: 11320024.
3. Stein JD. Serious adverse events after cataract surgery. Curr Opin Opthalmol. 2012 May; 23 (3); 219-25. Doi; 10.1097/ICU.0b013e3283524068. Review. PubMed PMID: 2245.221; PubMed Central PMCID: PMC3777802.
4. Ivancic D, Mandic Z, Barac J, Kopic M. Cataract surgery and postoperative complications in diabetic patients. Coll antropol. 2005;29 Suppl 1:55-8. PubMed PMID: 16193678.
5. Flesner P, Sander B, Henning V, Parving HH, Dornonville de la Cour M, Lund-Andersen H. Cataract surgery on diabetic patients. A postoperative evaluation of risk factors and complications. Acta Opthalmol Scand. 2002 Feb; 80 (1): 19- 24.
6. Koos MJ, Muntean A, Lehaci C. [Postoperative complications in cataract surgery]. Oftalmologia. 2003; 56 (1); 36-9. Romanian. PubMed PMID: 12886680.
7. Jane Olver, Lorraine Cassidy. Opthalmology at a glance: Cataract post-operative care. UK: Black well Science LTD; 2011 pp. 76
8. Jack J Kanski. Clinical Ophthalmology a systemic approach. 6th edition. Philadelphia: BH Elsvier: 2007, Pp, 343, 354
9. Shafi M Jatoi. Clinical Ophthalmology 5th edition. Karachi: Paramount; 2014. pp. 119-120
10. WHO. Priority Eye Diseases. Cataract. http://www.who.int/blindness/causes/priority/en/index1.html (Accessed on 12,11,2014)
11. Datiles III, Manuel .B and Mango, Benjamin V. Cataract: Clinical Types. Chapter 73.http://80.36.73.149/almacen/medicina/oftalmologia/enciclopedias/duane/pages/v1/v1c073.html (Accessed on September 11,11,2014.