

EVALUATION OF ANESTHETIC DRUG USE IN OPHTHALMIC PROCEDURES AT PRINCE ZAID BIN AL HUSSEIN HOSPITAL

Osama E. Al Bdairat, MD*¹, Amjad T. Z. Alhamadin, MD², Saif Addeen T. Al Bdairat, MD³, Albd-Motaleb M. Al Shra'a, MD⁴, Marwan H. Alzoubi, MD⁵, Mohammad E. Al Bdairat, Pharm-D⁶

¹Anesthesiologist, ²Internal Medicine, ³Ophthalmologist, ⁴Anesthesiologist, ⁵Anesthesiologist, ⁶Pharm-D



*Corresponding Author: Osama E. Al Bdairat, MD

Anesthesiologist.

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ABSTRACT

Introduction: While topical, local, and regional anesthesia are commonly used in ophthalmic surgery, general anesthesia may be necessary for children, uncooperative patients, or complex situations, selecting the incorrect anesthetic can result in systemic or ocular side effects, particularly in older patients with concurrent conditions. Drug utilization research is essential for rational medicine use in anesthetic departments, this study sought to evaluate the use of anesthetic drugs in ocular procedures at Prince Zaid Bin Al Hussein Hospital in order to maximize practice, minimize unnecessary consumption and improve patient safety. **Methodology:** All patients undergoing eye surgery who got any kind of anesthesia WERE included in this retrospective observational study, which was carried out, Data will be gathered from pharmacy databases and operating room records, Variables include procedure type, and specifics about anesthetic medications, including class and delivery method. The data will be analyzed using statistical software, the results will be summarized using descriptive statistics, and inferential tests, the outcomes will be compared with accepted clinical criteria. **Result:** the total annual consumption of topical ophthalmic anesthetic preparations was 820 minims. Lignocaine with fluorescein represented the largest share with 440 minims (53.7%), followed by Benoxinate with 380 minims (46.3%). During the same period, 190 ophthalmic procedures were recorded, mainly Phaco procedures, which accounted for 145 cases (76.3%). The calculated local consumption rate was approximately 4.32 anesthetic minims per ophthalmic procedure. **Conclusion:** Lignocaine with fluorescein and benoxinate was the most commonly used ocular anesthetic, this pattern is generally in line with international practice. This study offers a drug-utilization perspective, in contrast to the majority of international studies that concentrate on pain management and therapeutic efficacy. It connects the quantity and kind of ophthalmic procedures with the yearly administration of anesthetics.

KEYWORDS: Ophthalmic anesthesia, Anesthetic drug utilization, Drug utilization evaluation, ophthalmic surgery, Local anesthesia, General anesthesia.

INTRODUCTION

While topical, local, and regional anesthesia are commonly used in ophthalmic surgery, general anesthesia may be necessary for children, uncooperative patients, or complex situations (Lodhi & Tripathy, 2023; Mahan & Aiudi, 2021). However, selecting the incorrect anesthetic can result in systemic or ocular side effects, particularly in older patients with concurrent conditions (Aqil, 2010; Raczynska et al., 2016).

Drug utilization research is essential for rational medicine use in anesthetic departments (World Health Organization, 2003; Bachhav & Kshirsagar, 2015); this study sought to evaluate the use of anesthetic drugs in ocular procedures at Prince Zaid Bin Al Hussein Hospital in order to maximize practice, minimize unnecessary consumption and improve patient safety.

METHODOLOGY

Study Design and Setting

This retrospective descriptive observational study was conducted at the Prince Zaid Bin Al Hussein Hospital data was collected from Jan 2025 to Dec 2025, aiming to assess the use of anesthetic drugs during eye procedures by looking at pharmacy and operating room records.

Study Population

All patients who underwent ophthalmic surgical procedures were included in the study; patients with incomplete records or missing essential data about the use of anesthetic drugs were not included in the analysis.

Data Collection

The ophthalmic procedure type, anesthesia type, anesthetic drug name, drug class, and monthly intake were among the characteristics collected from operating room registers and hospital prescription data.

Statistical Analysis

The data was entered and analyzed using statistical software SPSS 20.

Ethical Considerations

Approved by the Research, Pharmaceutical and Clinical Studies, and Professional Ethics Committee of the Royal Medical Services Directorate.

RESULTS

Table 1: Annual Ophthalmic Procedure Distribution.

PROCEDURE TYPE	Total Number	Percentage %
Cataract / Phaco	145	76.3%
Chalazion / Minor lid procedure	15	7.9%
Pterygium / Ocular surface	25	13.2%
Rupture globe / other emergency procedures	5	2.6%
Total	190	100%

Pterygium surgery was the second most common ocular operation after cataract surgery.

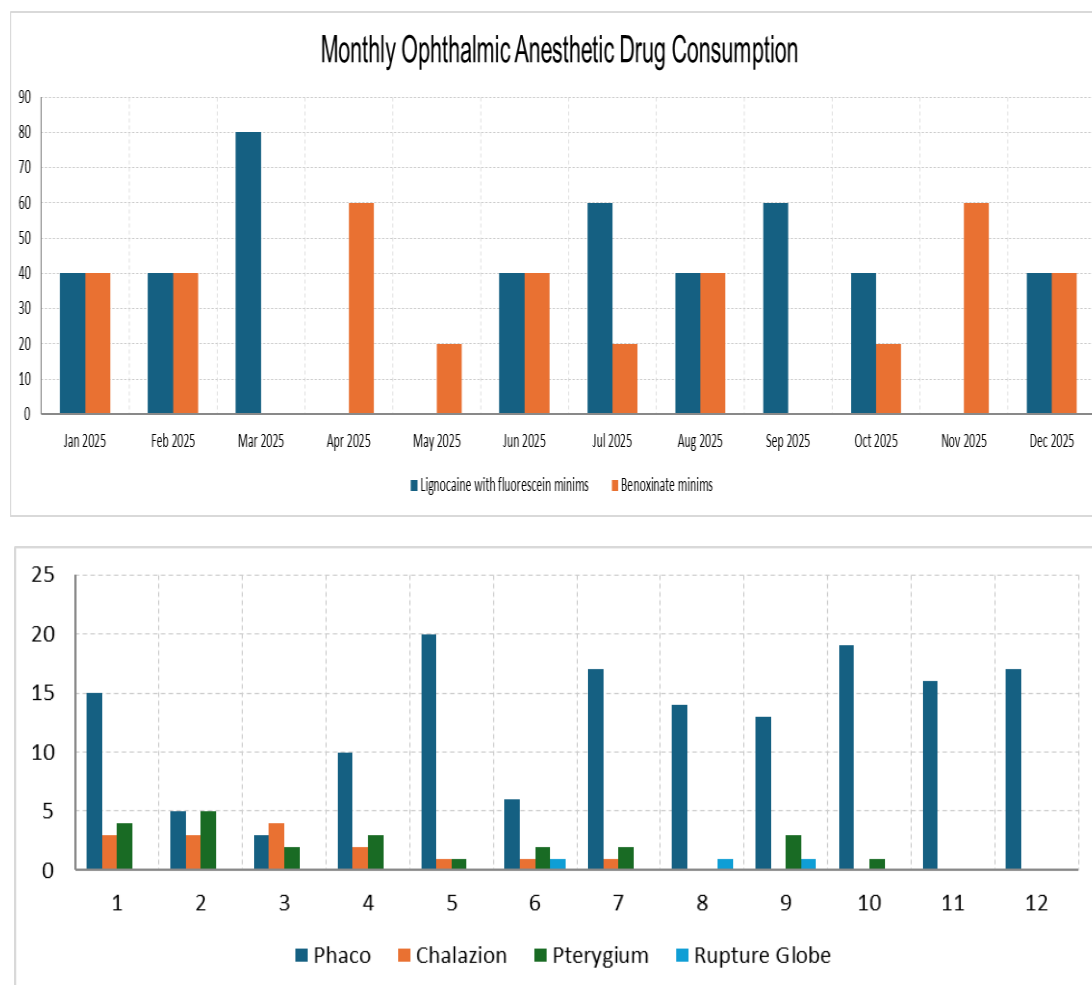
Table 2: Monthly Record of Ophthalmic Procedures.

Month	Phaco	Chalazion	Pterygium	Rupture globe / Notes
Jan	15	3	4	—
Feb	5	3	5	—
Mar	3	4	2	—
Apr	10	2	3	—
May	20	1	1	—
Jun	6	1	2	1
Jul	17	1	2	—
Aug	14	—	—	1 cut wound
Sep	13	—	3	1 AC wash / 1 removed stitch
Oct	19	—	1	—
Nov	16	—	—	—
Dec	17	—	—	EUA 1

Table 3: Monthly Ophthalmic Consumption Minims of Anesthesia.

Month	Lignocaine with fluorescein minims	Benoxinate minims	Total anesthetic minims
Jan	40	40	80
Feb	40	40	80
Mar	80	0	80
Apr	0	60	60
May	0	20	20
Jun	40	40	80
Jul	60	20	80
Aug	40	40	80
Sep	60	0	60
Oct	40	20	60
Nov	0	60	60
Dec	40	40	80
Total	440	380	820

The total annual consumption of ophthalmic anesthetic minims was 820 units.



DISCUSSION

The use of topical ophthalmic anesthetic preparations is explained by the prevalence of Phaco treatments. Published data indicates that topical anesthesia is feasible for certain cataract patients (Waheeb, 2010, Soliman et al., 2004).

It is important to interpret the slightly greater local consumption of lignocaine with fluorescein with caution, It is frequently used as a diagnostic stain and topical anesthetic (Bausch & Lomb, n.d.).

Chandra et al. found that 2% lidocaine gel was more efficient than 0.5% tetracaine drops in lowering discomfort during phacoemulsification cataract surgery, according to a number of international trials comparing topical ocular anesthetic agents (Chandra et al., 2018).

Chalam et al., on the other hand, discovered that during clear corneal phacoemulsification, topical TetraVisc offered superior pain management compared to lidocaine 2% gel. Nonetheless, surgeon satisfaction and patient comfort were similar for both medications (Chalam et al., 2009). These results imply that the appropriate topical anesthetic may differ depending on the surgical approach, assessed outcome, formulation, and concentration.

According to Bartfield et al., proparacaine had a marginally longer anesthetic duration and caused less discomfort upon instillation than tetracaine (Bartfield et al., 1994), their exclusion from the local dataset probably reflects departmental preference, procurement policy, or the availability of local formularies.

Topical anesthesia sometimes necessitates repeated instillation before to or during ophthalmic procedures; hence the local consumption rate of 4.32 anesthetic minims per treatment seems fair. However, rather than representing the precise dosage given to each patient, this figure should be understood as a dispensing-based metric.

All things considered, the local results are somewhat consistent with global practice. For cataract and small eye surgeries, the hospital mostly used topical ophthalmic anesthetic formulations, which is in line with international practice.

CONCLUSION

Lignocaine with fluorescein and benoxinate was the most commonly used ocular anesthetic, this pattern is generally in line with international practice.

This study offers a drug-utilization perspective, in contrast to the majority of international studies that concentrate on pain management and therapeutic efficacy. It connects the quantity and kind of ophthalmic procedures with the yearly administration of anesthetics.

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