RANDOMIZED CONTROLLED TRIAL OF SINGLE-DOSE VERSUS EXTENDED-DOSES PROPHYLACTIC ANTIBIOTIC FOR CAESAREAN SECTION IN MODIBBO ADAMA UNIVERSITY TEACHING HOSPITAL, YOLA

BY

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SUMMARY OF RESULT

5.0 RESULT

This chapter presents the results of the study comparing the effectiveness of single-dose versus extended-dose (24 hours) intravenous cefuroxime prophylaxis among women undergoing caesarean section at Modibbo Adama University Teaching Hospital, Yola. Data were analyzed using SPSS (version 25). Results are presented using descriptive statistics, Chi-square/Fisher's Exact tests, and binary logistic regression where appropriate. Level of statistical significance was set at $p < 0.05$.

5.1 Study Population and Follow-up

Plan sample size was 240 while 232 completed the study giving 96%. A total of 232 women who underwent caesarean section were recruited and analyzed. There were equal numbers of Participants in two groups: Group A (Single dose cefuroxime) = 116 (50.0%) and Group B (Extended dose cefuroxime for 24 hours) = 116 (50.0%).

5.2 Socio-demographic Characteristics of Respondents

The socio-demographic characteristics of respondents by study group are presented in Table 1 and are described characteristic by characteristic.

Age Group:

In Group A (single dose), the highest proportion of respondents were aged 20–29 years, numbering 58 (50.0%). This was followed by those aged 30–39 years, who were 35 (30.2%). Respondents aged ≥40 years accounted for 12 (10.3%), while those aged <20 years were the least represented, with 11 (9.5%). In Group B (extended dose), respondents aged 30–39 years formed the highest proportion at 47 (40.5%), followed by those aged 20–29 years, who were 34 (29.3%). Participants aged ≥40 years were 23 (19.8%), while the least were those aged <20 years, numbering 12 (10.3%).

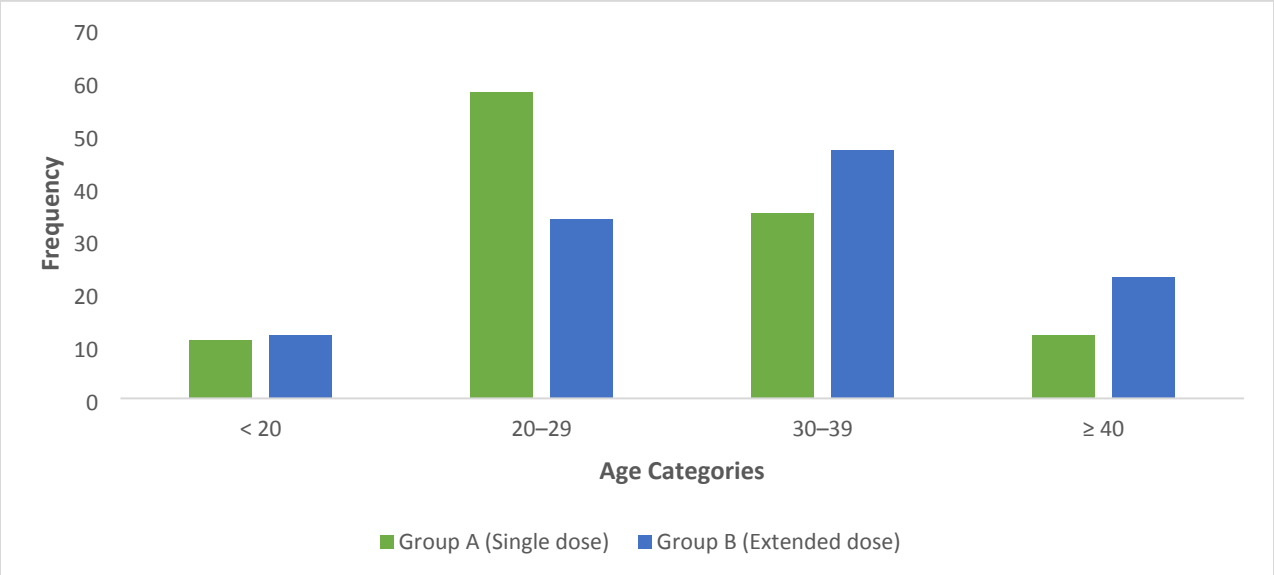

Figure 1**:** Participants age brackets in relation to the Study Groups.

Educational Status:

In Group A, respondents with secondary education constituted the highest proportion, with 59 (50.9%). This was followed by those with tertiary education, numbering 35 (30.2%). Respondents with no formal education accounted for 22 (19.0%), while none (0.0%) had only primary education. In Group B, respondents with tertiary education formed the highest proportion at 58 (50.0%), followed by those with secondary education, numbering 35 (30.2%). Participants with

primary education were 23 (19.8%), while none (0.0%) had no formal education. The result is further in figure 2 below.

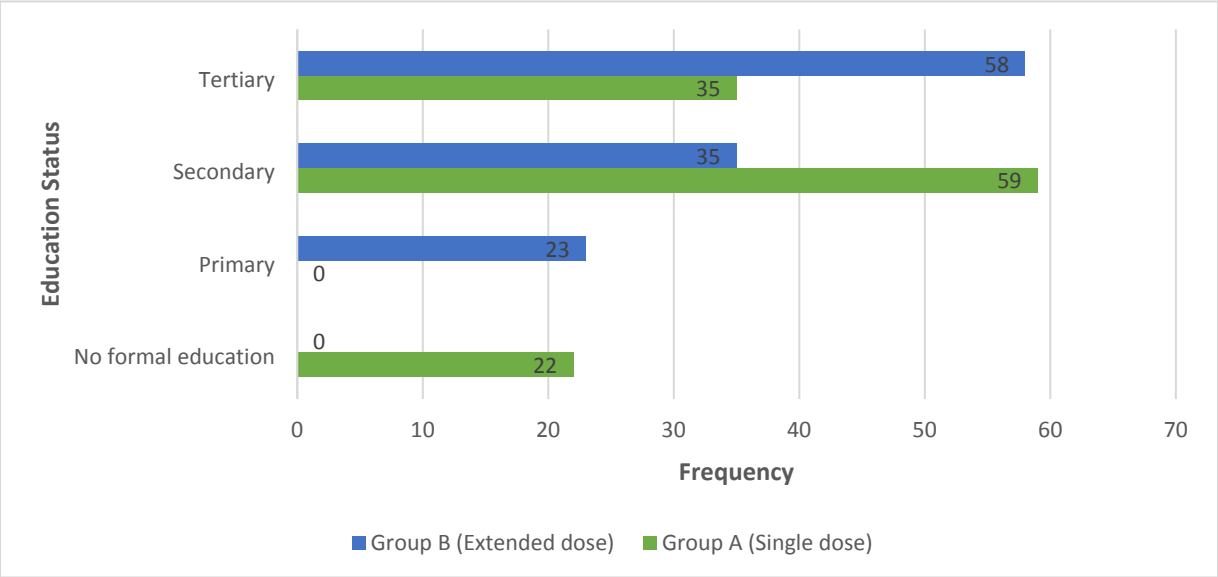

Figure 2: Educational Status of Participants in relation to the Study Groups

Occupational Status

In Group A, the highest proportion of respondents were unemployed, numbering 105 (90.5%), while 11 (9.5%) were employed. In Group B, unemployed respondents also formed the majority, with 70 (60.3%), followed by employed respondents, who were 46 (39.7%). As given

In figure bellow

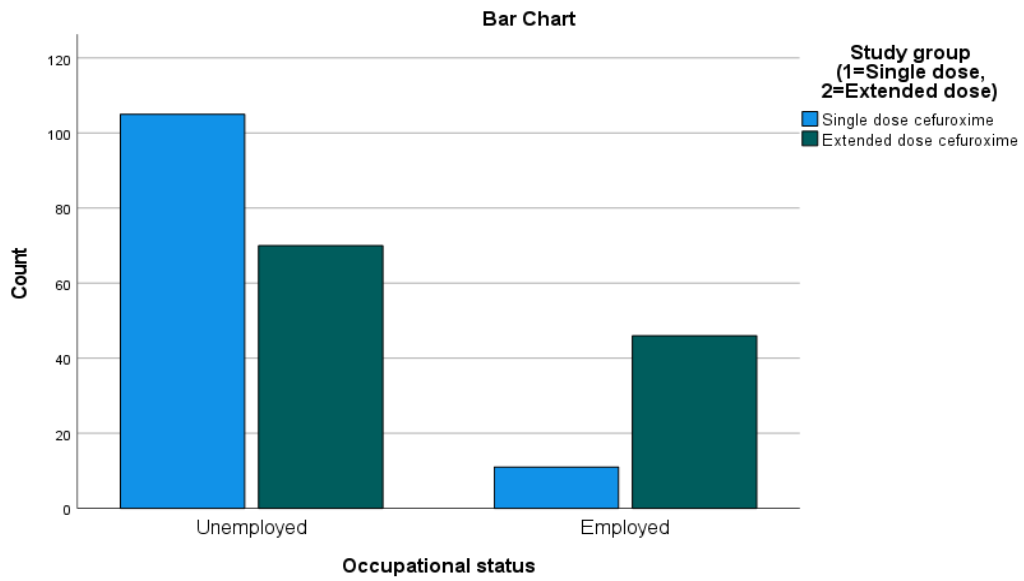

Figure 3: Employment Status by Study Groups

Place of Residence

In Group A, the majority of respondents resided in urban areas, accounting for 93 (80.2%), while 23 (19.8%) lived in rural areas. In Group B, urban residents also constituted the highest proportion at 80 (69.0%), followed by rural residents, numbering 36 (31.0%).

Table 1: Socio-demographic Characteristics by Study Group (n = 232)

Variables	Group A (Single dose) n=116	Group B (Extended dose) n=116	χ^2 (df) / Test	p-value
Age group (years)			11.518 (3)	0.009
< 20	11 (9.5%)	12 (10.3%)		
20–29	58 (50.0%)	34 (29.3%)		

30–39	35 (30.2%)	47 (40.5%)		
≥ 40	12 (10.3%)	23 (19.8%)		
Educational status			56.816 (3)	<0.001
No formal education	22 (19.0%)	0 (0.0%)		
Primary	0 (0.0%)	23 (19.8%)		
Secondary	59 (50.9%)	35 (30.2%)		
Tertiary	35 (30.2%)	58 (50.0%)		
Occupational status			28.491 (1)	<0.001
Unemployed	105 (90.5%)	70 (60.3%)		
Employed	11 (9.5%)	46 (39.7%)		
Place of residence			3.841 (1)	0.050
Urban	93 (80.2%)	80 (69.0%)		
Rural	23 (19.8%)	36 (31.0%)		

Note: Percentages are within study group (column %).

5.3 Obstetric Characteristics of Respondents

The obstetric characteristics of respondents by study group are presented in Table 2 and are described characteristic by characteristic.

Parity

In Group A (single dose), the highest proportion of respondents were nulliparous, numbering 56 (48.3%). This was followed by women with 1–2 live births, who were 39 (33.6%). Those with three or more live births constituted the smallest group, with 21 (18.1%). Similarly, in Group B (extended dose), nulliparous women formed the largest proportion at 57 (49.1%), followed by those with 1–2 live births, numbering 38 (32.8%). Women with three or more live births were the least represented, accounting for 21 (18.1%).

There was no statistically significant difference in parity distribution between the two groups ($\chi^2 = 0.022$, df = 2, p = 0.989). This indicates that parity was evenly distributed between the single-dose and extended-dose groups, showing that both groups were comparable in terms of reproductive history. As given in Figure 4 below.

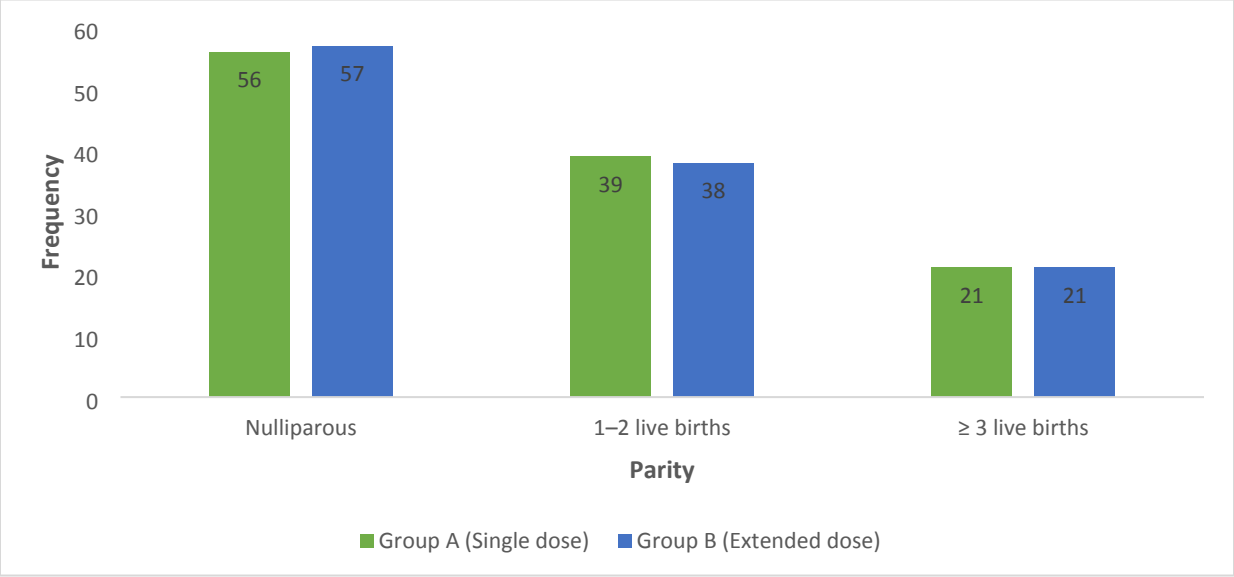

Figure 4: Parity between the Study Groups

Gestational Age Category

In Group A, the majority of respondents delivered at term gestation (37–41 weeks), accounting for 77 (66.4%). This was followed by preterm deliveries (<37 weeks), which were 24 (20.7%), while post-term deliveries (≥42 weeks) were the least common, numbering 15 (12.9%). In Group B, a similar pattern was observed. Term gestation remained the most frequent category with 77 (66.4%), followed by preterm deliveries, numbering 25 (21.6%), and post-term deliveries, which accounted for 14 (12.1%).

The difference in gestational age category between the two groups was not statistically significant ($\chi^2 = 0.055$, df = 2, p = 0.973). This shows that gestational age at delivery was comparable between the single-dose and extended-dose groups, indicating similar timing of caesarean section in both groups. As given in Figure 5.

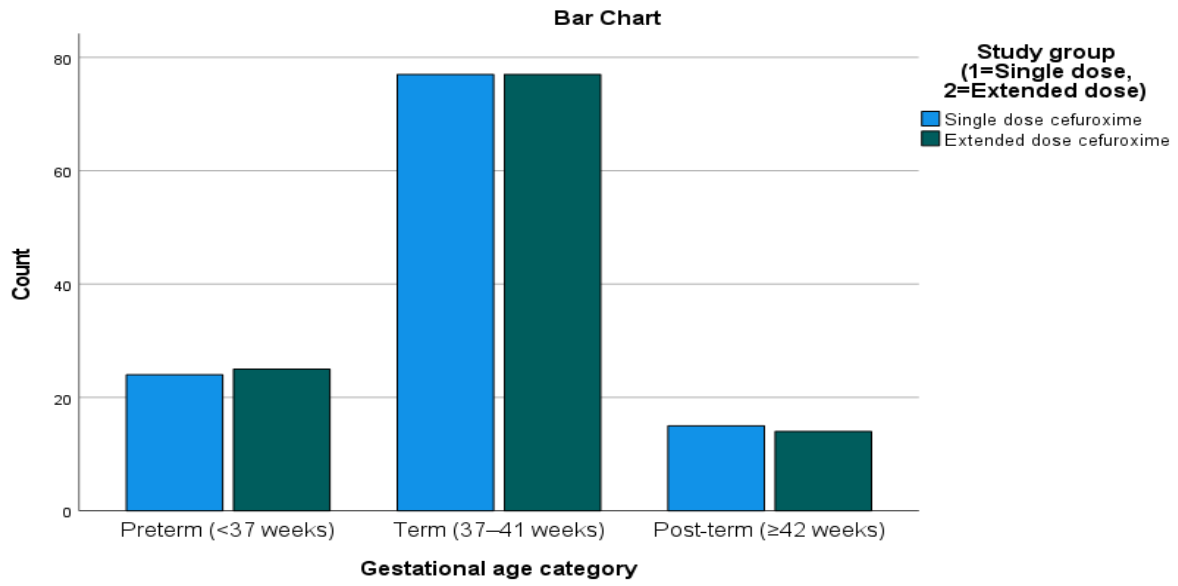

Figure 5: Gestational Age Category by Study Groups

Previous Caesarean Section

In Group A, the highest proportion of respondents had no previous caesarean section, numbering 72 (62.1%). This was followed by women with two or more previous caesarean sections, who were 25 (21.6%), while those with one previous caesarean section were 19 (16.4%). In Group B, women with no previous caesarean section also formed the largest group at 70 (60.3%), followed by those with two or more previous caesarean sections, numbering 26 (22.4%), and those with one previous caesarean section, who were 20 (17.2%).

There was no statistically significant difference in previous caesarean section history between the two groups ($\chi^2 = 0.073$, df = 2, p = 0.964). This indicates that prior caesarean section exposure was similarly distributed between the single-dose and extended-dose groups, suggesting comparable obstetric risk profiles. As given in Figure 6.

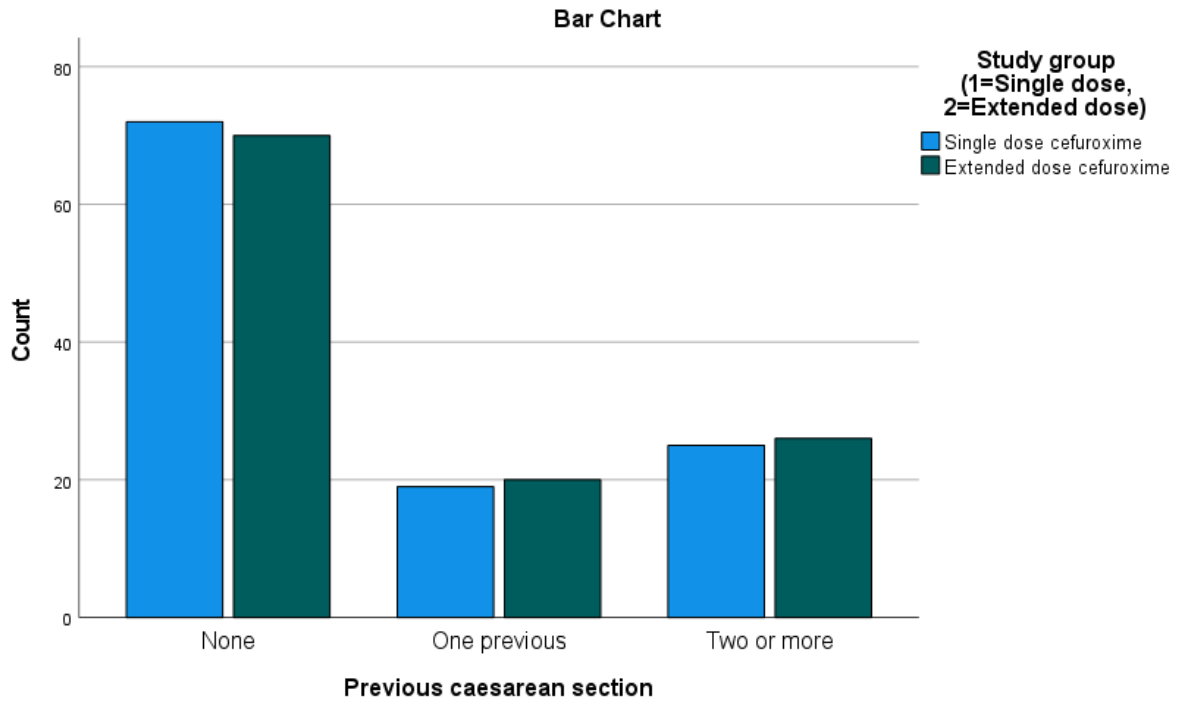

Figure 6: Gestational age category by Study Groups

Thus, parity, gestational age category, and previous caesarean section history showed no statistically significant differences between Group A and Group B. This demonstrates that the two study groups were well matched with respect to key obstetric characteristics, ensuring comparability between women who received single-dose and extended-dose cefuroxime prophylaxis.

Table 2: Obstetric Characteristics by Study Group (n = 232)

Variables	Group A (Single dose) n=116	Group B (Extended dose) n=116	χ^2 (df) / Test	p-value
Parity			0.022 (2)	0.989
Nulliparous	56 (48.3%)	57 (49.1%)		
1–2 live births	39 (33.6%)	38 (32.8%)		
≥ 3 live births	21 (18.1%)	21 (18.1%)		
Gestational age category			0.055 (2)	0.973
Preterm (<37 weeks)	24 (20.7%)	25 (21.6%)		
Term (37–41 weeks)	77 (66.4%)	77 (66.4%)		
Post-term (≥42 weeks)	15 (12.9%)	14 (12.1%)		

Previous caesarean section			0.073 (2)	0.964
None	72 (62.1%)	70 (60.3%)		
One previous	19 (16.4%)	20 (17.2%)		
Two or more	25 (21.6%)	26 (22.4%)		

5.4 Operative Characteristics

Type of Anaesthesia

In Group A (single dose), the overwhelming majority of procedures were performed under spinal anaesthesia, accounting for 114 (98.3%) cases. Only 2 (1.7%) procedures were conducted under general anaesthesia, representing the least frequent mode. Similarly, in Group B (extended dose), spinal anaesthesia was used in 115 (99.1%) of cases, while general anaesthesia was used in 1 (0.9%) case.

There was no statistically significant difference in the type of anaesthesia between the two groups (Fisher's Exact Test, $p = 1.000$). This indicates that both the single-dose and extended-dose groups were managed using similar anaesthetic techniques, minimizing anaesthesia-related variation between the groups.

Presence of Adhesion

In Group A, most women had no intra-abdominal adhesions, numbering 100 (86.2%), while 16 (13.8%) were found to have adhesions at surgery. In Group B, a similar pattern was observed, with 101 (87.1%) having no adhesions and 15 (12.9%) having adhesions.

The difference in adhesion status between the two groups was not statistically significant (χ^2 = 0.037, df = 1, p = 0.847). This suggests that the burden of intra-abdominal adhesions was comparable between the single-dose and extended-dose groups, indicating similar operative complexity in both groups.

Duration of Surgery

In Group A, the majority of surgeries were completed in less than 60 minutes, accounting for 81 (69.8%) cases. Procedures lasting 60–90 minutes were fewer, numbering 35 (30.2%). In Group B, most surgeries were also completed in less than 60 minutes, with 88 (75.9%) cases, while 28 (24.1%) lasted 60–90 minutes.

There was no statistically significant difference in the duration of surgery between the two groups (χ^2 = 1.068, df = 1, p = 0.301). This indicates that operative time was similar in both the single-dose and extended-dose groups, suggesting comparable surgical exposure and intraoperative handling.

Estimated Blood Loss

In Group A, the most common estimated blood loss category was less than 500 mL, recorded in 91 (78.4%) women. This was followed by blood loss of 500–1000 mL, seen in 24 (20.7%) cases. In Group B, a similar distribution was observed. Blood loss of less than 500 mL occurred in 91 (78.4%) women, 500–1000 mL in 25 (21.6%).

The difference in estimated blood loss between the two groups was not statistically significant (χ^2 = 1.020, df = 2, p = 0.600). This demonstrates that intraoperative blood loss was comparable between women who received single-dose and those who received extended-dose cefuroxime prophylaxis.

Thus, type of anaesthesia, presence of adhesions, duration of surgery, and estimated blood loss showed no statistically significant differences between Group A and Group B. This confirms that the two study groups were well matched with respect to operative characteristics, ensuring that observed postoperative outcomes were unlikely to be influenced by intraoperative differences between the single-dose and extended-dose groups.

Table 3: Operative Characteristics by Study Group (n = 232)

Variables	Group A (Single dose) n=116	Group B (Extended dose) n=116	Test	p-value
Type of anaesthesia			Fisher's Exact	1.000
Spinal	114 (98.3%)	115 (99.1%)		
General	2 (1.7%)	1 (0.9%)		
Presence of adhesion			$\chi^2(1)=0.037$	0.847
No	100 (86.2%)	101 (87.1%)		
Yes	16 (13.8%)	15 (12.9%)		

Duration of surgery category			$\chi^2(1)=1.068$	0.301
< 60 minutes	81 (69.8%)	88 (75.9%)		
60–90 minutes	35 (30.2%)	28 (24.1%)		
Estimated blood loss category			$\chi^2(2)=1.020$	0.600
< 500 mL	91 (78.4%)	91 (78.4%)		
500–1000 mL	24 (20.7%)	25 (21.6%)		

5.5 Postoperative Infectious Morbidity and Other Outcomes

The postoperative outcomes of respondents by study group are presented in Table 4 and are described outcome by outcome, beginning with the most frequent finding and ending with the least. Results are reported as number and percentage, followed by the relevant test statistics. Where no statistically significant difference exists, a brief implication regarding comparability between the single-dose and extended-dose groups is provided.

5.5.1 Wound Infection and Wound Swab Results

Surgical site infections

In Group A (single dose), 113 (97.4%) had no surgical site infection, while 3 (2.6%) had surgical site infections, representing the least frequent finding. Similarly, in Group B (extended dose), 114 (98.3%) had no surgical site infections, and 2 (1.7%) had surgical site infections.

There was no statistically significant difference between the two groups (Fisher's Exact Test, p >0.99). This indicates that the occurrence of surgical site infections was similarly low in both the single-dose and extended-dose groups**.**

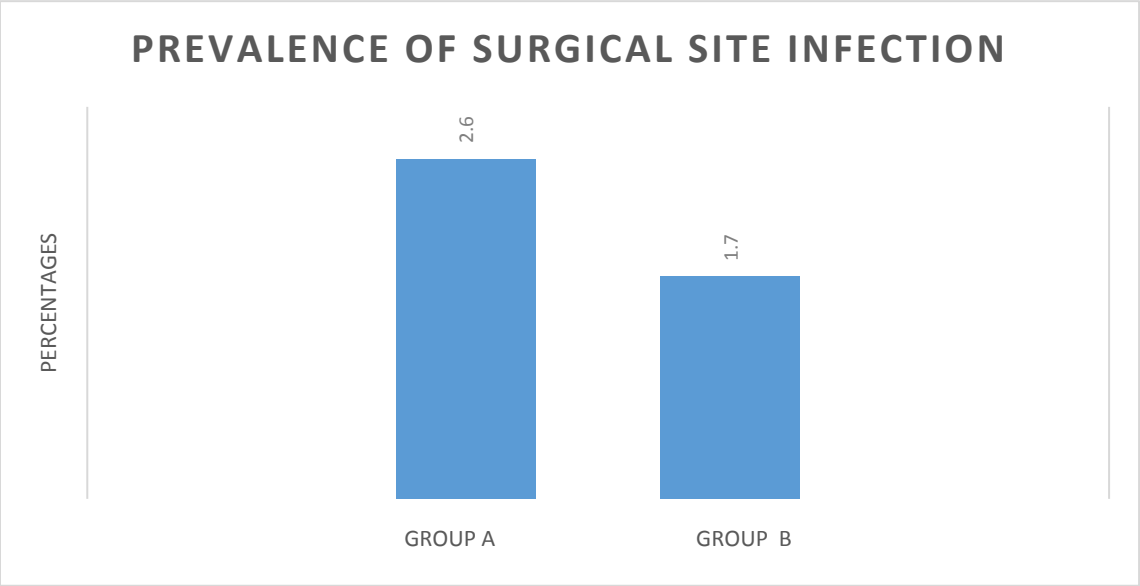

Figure 7: Prevalence of Surgical site infection

Wound Swab Results

Wound swab was not done in the majority of participants in both groups. In Group A, 113 (97.4%) had no wound swab performed, while 3 (2.6%) had a negative swab result and 0 (0.0%) had a positive result. In Group B, 113 (98.3%) had no wound swab performed, 1 (0.9%) had a negative result, and 1 (0.9%) had a positive result.

There was no statistically significant difference in wound swab results between the two groups (χ^2 = 1.996, df = 2, p = 0.369). This demonstrates that microbiological wound findings were comparable between the single-dose and extended-dose groups.

5.5.2 Duration of Hospital Stay

In Group A, the majority of women were discharged within 25–72 hours, accounting for 97 (83.6%), while 19 (16.4%) experienced a hospital stay longer than 72 hours. In Group B, 104 (89.7%) were discharged within 25–72 hours, and 12 (10.3%) had a prolonged hospital stay beyond 72 hours.

The difference in duration of hospital stay between the two groups was not statistically significant (χ^2 = 1.824, df = 1, p = 0.177). This indicates that length of postoperative hospitalization was similar in women receiving single-dose and extended-dose cefuroxime.

5.5.3 Reasons for Prolonged Hospital Stay

In group A, hypertension was reported in 11 (9.5%), and infection as in 3 (2.6%). Other less frequent reasons included low molecular weight heparin (Clexane) use, waiting for wound swab, and wound dressing, and each accounting for 1–2% of cases.

In Group B, hypertension in 6 (5.2%), and smaller proportions attributed to infection, low molecular weight heparin use, prematurity, and wound dressing, each occurring in 1–2% of cases.

There was no statistically significant difference in the distribution of reasons for prolonged hospital stay between the two groups (χ^2 = 8.791, df = 8, p = 0.360). This suggests that the causes of prolonged hospitalization were similarly distributed between the single-dose and extended-dose groups.

Thus, wound infection signs, wound swab results, duration of hospital stay, and reasons for prolonged hospitalization showed no statistically significant differences between Group A and Group B. This confirms that postoperative infectious morbidity and related outcomes were comparable between women who received single-dose cefuroxime and those who received extended-dose prophylaxis as given in Figure 7.

Table 4: Postoperative Outcomes by Study Group (n = 232)

Outcome/Variable	Category	Group A (Single dose) n=116	Group B (Extended dose) n=116	Test (df)	p-value
Wound infection sign: Purulent drainage	No	113 (97.4%)	114 (98.3%)	Fisher's Exact	1.000
	Yes	3 (2.6%)	2 (1.7%)		
Wound infection sign: Pain/Tenderness	No	109 (94.0%)	112 (96.6%)	$\chi^2(1)=0.859$	0.354
	Yes	7 (6.0%)	4 (3.4%)		
Wound infection sign: Localized swelling	No	112 (96.6%)	114 (98.3%)	Fisher's Exact	0.683
	Yes	4 (3.4%)	2 (1.7%)		
Wound infection sign: Redness	No	114 (98.3%)	115 (99.1%)	Fisher's Exact	1.000

	Yes	2 (1.7%)	1 (0.9%)		
Wound swab result (n = 231)	Negative	3 (2.6%)	1 (0.9%)	$\chi^2(2)=1.996$	0.369
	Positive	0 (0.0%)	1 (0.9%)		
	Not done	113 (97.4%)	113 (98.3%)		
Duration of hospital stay category	25–72 hours	97 (83.6%)	104 (89.7%)	$\chi^2(1)=1.824$	0.177
	> 72 hours	19 (16.4%)	12 (10.3%)		
Reason for prolonged hospital stay	(No Side Effects)	96 (82.8%)	104 (89.7%)	$\chi^2(8)=8.791$	0.360
	Infection	3 (2.6%)	0 (0.0%)		
	Clexane	2 (1.7%)	1 (0.9%)		
	Hypertension	11 (9.5%)	6 (5.2%)		
	Infection	1 (0.9%)	2 (1.7%)		
	Prematurity	1 (0.9%)	1 (0.9%)		
	waiting for swab	1 (0.9%)	0 (0.0%)		
	wound dressing	1 (0.9%)	2 (1.7%)		

Note: Values are presented as frequency (column %). Fisher's Exact test was used where expected cell counts were <5.

5.6 Febrile Morbidity

No case of postoperative fever was recorded among respondents in either Group A (single-dose cefuroxime) or Group B (extended-dose cefuroxime) during the entire postoperative follow-up period. Thus, 100% (116/116) of women in both groups had no febrile morbidity, with 0 (0.0%) reporting postoperative fever. Because febrile morbidity was constant across both study groups, no comparative statistical test was computed. This indicates that both the single-dose and extended-dose regimens were comparable with respect to postoperative febrile outcomes.

5.7 Factors Associated with Infectious Morbidity (Bivariate Analysis)

The bivariate analysis of factors associated with infectious morbidity is summarized in Table 5 and is described factor by factor, beginning with the highest frequency of morbidity and ending with the lowest. Results are presented as number and percentage, followed by test statistics and a brief implication regarding group comparison.

Study Group

Infectious morbidity occurred in 3 (2.6%) women in the single-dose group, while 113 (97.4%) had no infectious morbidity. In the extended-dose group, 2 (1.7%) developed infectious morbidity, while 114 (98.3%) did not.

There was no statistically significant association between study group and infectious morbidity (Fisher's Exact Test, $p = 1.000$). This indicates that the occurrence of infectious morbidity was

similar between women who received single-dose cefuroxime and those who received extended-dose prophylaxis.

Parity

Among women with three or more live births, infectious morbidity was highest, occurring in 4 (9.5%), while 38 (90.5%) had no infectious morbidity.

In nulliparous women, 1 (0.9%) developed infectious morbidity, whereas 112 (99.1%) did not.

No case of infectious morbidity was recorded among women with one to two live births, with 0 (0.0%) affected and 77 (100.0%) unaffected.

There was a statistically significant association between parity and infectious morbidity (χ^2 = 13.375, df = 2, p = 0.001). This shows that infectious morbidity varied by parity across the study population, irrespective of antibiotic dosing group.

Previous Caesarean Section

Women with one previous caesarean section had the highest proportion of infectious morbidity, with 3 (7.7%) affected and 36 (92.3%) unaffected. Among women with two or more previous caesarean sections, 1 (2.0%) developed infectious morbidity, while 50 (98.0%) did not.

Women with no previous caesarean section had the lowest frequency, with 1 (0.7%) affected and 141 (99.3%) unaffected. The association between previous caesarean section and infectious morbidity was statistically significant (χ^2 = 7.097, df = 2, p = 0.029). This indicates that infectious morbidity differed across categories of previous caesarean section in both treatment groups.

Presence of Adhesion

Among women with intra-abdominal adhesions, infectious morbidity was recorded in 4 (12.9%), while 27 (87.1%) had no infectious morbidity. In contrast, among women without adhesions, only 1 (0.5%) developed infectious morbidity, while 200 (99.5%) remained unaffected. This difference was statistically significant (Fisher's Exact Test, p = 0.001). This demonstrates that infectious morbidity was more frequent among women with adhesions, regardless of whether they received single-dose or extended-dose cefuroxime.

Infectious morbidity showed no significant association with study group, confirming comparability between the single-dose and extended-dose regimens. However, parity, previous caesarean section, and presence of adhesion were significantly associated with infectious morbidity at the bivariate level.

Table 5: Factors Associated with Infectious Morbidity among Participants (N = 232)

Variable	Category	Infectious morbidity Present n (%)	Infectious morbidity Absent n (%)	Test	p-value
Study group	Single dose	3 (2.6%)	113 (97.4%)	Fisher's Exact	1.000
	Extended dose	2 (1.7%)	114 (98.3%)		
Parity	Nulliparous	1 (0.9%)	112 (99.1%)	$\chi^2(2)=13.375$	0.001
	1–2 live births	0 (0.0%)	77 (100.0%)		

	≥ 3 live births	4 (9.5%)	38 (90.5%)		
Previous caesarean section	None	1 (0.7%)	141 (99.3%)	$\chi^2(2)=7.097$	0.029
	One previous	3 (7.7%)	36 (92.3%)		
	Two or more	1 (2.0%)	50 (98.0%)		
Presence of adhesion	No	1 (0.5%)	200 (99.5%)	Fisher's Exact	0.001
	Yes	4 (12.9%)	27 (87.1%)		

Note: Percentages are within each factor category (row %). Fisher's Exact Test is preferred where expected cell counts were <5.

5.8 Logistic Regression Model for Predictors of Infectious Morbidity

Under this unit, the results of the binary logistic regression analysis are presented predictor by predictor, starting from the study group, followed by obstetric, operative, and socio-demographic variables. Results are described strictly as statistical outcomes, with a brief line indicating how the single-dose and extended-dose groups compare.

Overall Model Performance

Binary logistic regression analysis was conducted using infectious morbidity (present/absent) as the dependent variable. The overall regression model was statistically significant, as shown by the Omnibus test ($\chi^2 = 44.445$, df = 13, $p < 0.001$).

However, model estimation did not converge, as the maximum number of iterations was reached. This indicates model instability, attributable to the very low number of outcome events (5 cases of infectious morbidity) and sparse data across multiple predictor categories. As a result, parameter estimates showed extremely wide confidence intervals, and none of the predictors could be identified as reliable independent predictors.

Study Group (Single-dose vs Extended-dose Cefuroxime)

The comparison between single-dose and extended-dose cefuroxime showed a regression coefficient (B) of 57.340, with a standard error of 2749.319 and a non-significant p-value ($p = 0.983$). The estimated odds ratio was extremely large ($\text{Exp(B)} \approx 7.99 \times 10^{24}$), with an unestimable confidence interval, reflecting instability of the estimate. This indicates that, after adjustment, there was no demonstrable difference between the single-dose and extended-dose regimens in predicting infectious morbidity.

Parity

When parity was entered as a categorical variable, the overall effect of parity was not statistically significant (Wald = 0.000, df = 2, $p = 1.000$). Pairwise comparisons showed that nulliparous women compared with those with ≥3 births had a very large positive coefficient (B = 25.825) with a non-significant p-value ($p = 0.997$), while women with 1–2 births compared with ≥3 births had a large negative coefficient (B = −66.027) with $p = 0.992$.

All parity-related odds ratios were accompanied by unstable and uninformative confidence intervals. This shows that parity did not independently predict infectious morbidity when both antibiotic regimens were considered together.

Gestational Age Category

Gestational age category, entered as a categorical predictor, showed no statistically significant association with infectious morbidity (Wald = 0.000, df = 2, p = 1.000).

Regression coefficients and odds ratios were unstable, with wide or unestimable confidence intervals. This suggests that gestational age did not independently differentiate infectious morbidity between the single-dose and extended-dose groups.

Previous Caesarean Section

The overall effect of previous caesarean section was not statistically significant in the regression model (Wald = 0.001, df = 2, p = 1.000). Although large regression coefficients were observed for individual categories, these were associated with very large standard errors and non-significant p-values. This indicates that, after adjustment, previous caesarean section did not independently distinguish infectious morbidity between treatment groups.

Presence of Adhesion

Presence of adhesion showed a regression coefficient of B = −98.702, with a large standard error (3955.815) and a non-significant p-value (p = 0.980). The odds ratio approached zero, with an unstable confidence interval. This demonstrates that, despite its association at the bivariate level,

presence of adhesion did not emerge as an independent predictor of infectious morbidity when both prophylactic regimens were analyzed together.

Duration of Surgery

Duration of surgery showed a regression coefficient of B = 4.649, with a standard error of 4854.707 and a non-significant p-value (p = 0.999). The estimated odds ratio (Exp(B) = 104.460) was associated with an unstable confidence interval. This indicates that duration of surgery did not independently influence infectious morbidity across the single-dose and extended-dose groups.

Estimated Blood Loss

Estimated blood loss category had a regression coefficient of B = −27.768, with a large standard error (1469.697) and a non-significant p-value (p = 0.985). The odds ratio approximated zero, with an unstable confidence interval. This shows that estimated blood loss did not independently predict infectious morbidity between the two antibiotic regimens.

Educational Status

Educational status, entered as a categorical variable, showed no statistically significant overall effect (Wald = 0.000, df = 3, p = 1.000). All category-specific coefficients were unstable, with wide confidence intervals and non-significant p-values. This indicates that educational status did not independently differentiate infectious morbidity between women who received single-dose versus extended-dose cefuroxime.

The model constant had a coefficient of B = 2.720, with a standard error of 10719.488 and a non-significant p-value (p = 1.000), further reflecting overall model instability.

Although the logistic regression model was statistically significant overall, none of the predictors emerged as a reliable independent predictor of infectious morbidity. The instability of the estimates, reflected by extremely large standard errors and wide confidence intervals, indicates that the regression findings should be interpreted with caution.

Overall, the adjusted analysis confirms that there was no demonstrable difference between the single-dose and extended-dose cefuroxime regimens in predicting postoperative infectious morbidity.

Table 6: Binary Logistic Regression for Factors Associated with Infectious Morbidity (N = 232)

Predictor	B	S.E.	Wald	df	p-value	Exp(B)	95% CI for Exp(B)
Study group (Single vs Extended)	57.340	2749.319	0.000	1	0.983	7.99E+24	Unstable/Not estimable
Parity (overall)	—	—	0.000	2	1.000	—	—
Parity (Nulliparous vs ≥3)	25.825	7140.329	0.000	1	0.997	1.64E+11	Unstable
Parity (1–2 vs ≥3)	-66.027	6246.966	0.000	1	0.992	~0.000	Unstable
Gestational age (overall)	—	—	0.000	2	1.000	—	—

Previous CS (overall)	—	—	0.001	2	1.000	—	—
Presence of adhesion (Yes vs No)	-98.702	3955.815	0.001	1	0.980	~0.000	Unstable
Duration of surgery	4.649	4854.707	0.000	1	0.999	104.460	Unstable
Estimated blood loss	-27.768	1469.697	0.000	1	0.985	~0.000	Unstable
Educational status (overall)	—	—	0.000	3	1.000	—	—
Constant	2.720	10719.488	0.000	1	1.000	15.174	—

Note: Model estimation terminated at iteration 20; therefore, the regression estimates are unstable.

5.9 Summary of Key Findings

The two study groups were equal in size, with 116 participants each in the single-dose and extended-dose cefuroxime groups. Significant differences were observed in socio-demographic characteristics between the groups, particularly with respect to age group distribution, educational status, and occupational status. In contrast, obstetric characteristics, including parity, gestational age category, and previous caesarean section history, as well as operative characteristics such as type of anaesthesia, presence of adhesions, duration of surgery, and estimated blood loss, were comparable between both groups.

Postoperative wound infection indicators, including purulent drainage, pain or tenderness, localized swelling, redness, and wound swab results, were uncommon and occurred at similarly

low frequencies in both groups. The duration of hospital stay and the reasons for prolonged hospitalization did not differ significantly between the single-dose and extended-dose groups. No case of postoperative febrile morbidity was recorded throughout the study period.

On bivariate analysis, parity, previous caesarean section, and the presence of adhesions showed statistically significant associations with infectious morbidity. However, binary logistic regression analysis did not yield stable or reliable estimates due to the very low number of infectious morbidity events, indicating that no independent predictor of infectious morbidity could be established in this study.