

Evaluation of clipper versus razor in preoperative hair removal and its effects on surgical site infections

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Abstract

Background: Infections that occur in the wound created by an invasive surgical procedure are referred to as surgical site infections (ssis). Ssis are one of the most important causes of healthcare-associated infections (hcais). In this endeavor, skin preparation methods play an important role, which includes selecting a right antiseptic solution to selecting a right technique of removal of hair in surgical site. The evolution of these continues endlessly. Innumerable studies have been carried out to determine the best possible method. Hence the need to carry out the study to develop an optimum method of pre-operative skin preparation. In this context, the present study intends to evaluate clipper vs razor method of hair removal in preoperative skin preparation and its effects on surgical site infection.

Aims: To compare the rate of surgical site infection by using clipping and razor shaving

Methods: A total of 306 patients fulfilling inclusion and exclusion criteria who were admitted in surgical department, ESIC MC & PGIMSR, Bangalore, between March 2021 to August 2022 were included in the study. Clipper and razor method were applied on 153 patients each in pre operative removal of hair and they were evaluated in terms of development surgical site infection, adequacy of hair removal and associated skin injuries.

Results: Mean age of subjects in razor group and clipper group was 44.41+/-12.297 and 42.56+/-12.710 respectively. Razor group had 80 males and 73 female patients. Clipper group had 83 males and 70 female patients. Mean bmi of subjects in razor group and clipper group was 25.93+/-4.409 and 25.76+/-4.20 respectively. Mean bun of subjects in razor group and clipper group was 16.87+/-2.717 and 17.071+/-2.690 respectively. Mean hemoglobin of subjects in razor group and clipper

group was 12.22 \pm 1.944 and 12.431 \pm 1.932 respectively. Mean duration of surgery for subjects in razor group and clipper group was 52.25 \pm 13.46 and 51.47 \pm 13.73 respectively. Mean days of pre hospitalization of subjects in razor group and clipper group was 1.111 \pm 0.372 and 1.045 \pm 0.265 respectively. Mean days of post operation of subjects in razor group and clipper group was 2.05 \pm 1.704 and 1.64 \pm 1.269 respectively.

In razor group 151 patients had complete hair removal and 2 patients had partial removal of hair. In clipper group 145 patients had complete removal of hair and 8 patients had partial removal of hair. 24 patients in the razor group had skin injury and 2 patients in the clipper group had skin injury. 23 patients in the razor group had erythema and in clipper group 1 patient had skin erythema. 1 patient in the razor group and 1 patient in clipper group had skin rashes. 22 cases in razor group had ssi and 131 cases did not have ssi. Clipper group had 6 ssi cases and 147 cases did not have ssi. Staphylococcus aureus was grown in 18 patients of razor group and 4 patients of clipper group. Further e. Coli was grown in 4 patients of razor and 1 patient of clipper group. Pseudomonas was grown in 1 patient of clipper group.

Conclusion: Overall incidence of ssi among the study group was 9.15%. patients treated with razor method of hair removal had 14.3% incidence of ssi and patients treated with clipper method of hair removal had 3.92% incidence of ssi. This study demonstrates that post operative wound infection is strongly associated with presence of skin injuries inflicted during preoperative hair removal commonly after razor shaving. It shows that clipping is superior to razor shaving for preoperative hair removal in our setting. We recommend larger

population, multicenter, randomized controlled studies to further investigate the relationship of postoperative wound infection to method of preoperative hair removal observed in this study.

Keywords: SSI, HCAIS, Surgical.

Introduction

Infection in the vicinity of surgical incisions within 30 days of a surgical procedure, stated as surgical site infection, contributes significantly to surgical morbidity and mortality each year. Surgical site infection (ssi) accounts for 15 % of all hospital acquired infections and among surgical patients, is the most common nosocomial infection.¹

Most ssis are caused by contamination of an incision with microorganisms from the patient's own body during surgery rather than from outside. Majority of ssis are preventable. The study of organisms causing ssis is used for selecting appropriate antibiotic prophylaxis. Surgical site infections can be divided into major and minor surgical site infections. A major ssi is defined as a wound with significant quantity of pus draining spontaneously or it needs a secondary procedure to drain it. The patient may have systemic signs like pyrexia tachycardia and raised white blood cell count. Minor wound infections may discharge pus or infective serous fluid which should not be associated with excessive discomfort, systemic signs or delay in returning home. The differentiation between major and minor wound infections is important in audit and trials of antibiotic prophylaxis. Localized wound infections are either abscesses or cellulitis and lymphangitis. Abscesses need drainage.

Battle against surgical site infections (ssis) as old as civilization itself. According to Charaka, a noted practitioner of ayurveda in ancient India: "a physician

who fails to enter the body of a patient with the lamp of knowledge and understanding can never treat diseases. He should first study all the factors, including environment, which influence a patient's disease, and then prescribe treatment. It is more important to prevent the occurrence of disease than to seek a cure". From then to now, surgical practitioners have been fighting the longest known war on this earth – against infections. As a result, today's surgical science has developed a vast repository of knowledge which will help not only in treating the infections, but preventing them as well.

In this endeavor, skin preparation methods play an important role, which includes selecting a right antiseptic solution to selecting a right technique of removal of hair in surgical site. The evolution of these continues endlessly. Innumerable studies have been carried out to determine the best possible method. Hence the need to carry out the study to develop an optimum method of pre-operative skin preparation. In this context, the present study intends to evaluate clipper vs razor method of hair removal in preoperative skin preparation and its effects on surgical site infection.

Methodology

Source of data: This is a prospective randomized control study conducted in the department of general surgery hospital, ESIC medical college & PGIMS. Ethical clearance was approved from the institutional ethical committee of ESIC medical college & PGIMS. The duration of the study was for a period of 18 months from march 2021 to august 2022. The study included patients admitted in the department of general surgery hospital, who fulfilled the inclusion criteria.

Study design and method of collection of data (including sampling procedure if any)

A preformed written consent form was taken from all patients fulfilling the inclusion criteria and after explaining the objective, procedure and expected outcome in detail before the start of the study.

Sample size calculation

Sample size was estimated based on the difference in proportion of ssi in shaving group as 17/181 i.e., 9.4% from the study by varia dm & kacheriwala s and assuming that trimming group it reduces by 80% i.e., 2%, the sample size required was found to be 153 in each group. The sample size was calculated using below mentioned formula.⁵

$$n = \frac{2(Z_{\alpha/2} + Z_{\beta})^2 P (1-P)}{(p_1 - p_2)}$$

Were,

$$Z_{\alpha/2} = Z_{0.05/2} = Z_{0.025} = 1.96 \text{ at type 1 error of 5\%}$$

$$Z_{\beta} = Z_{0.20} = 0.842 = \text{At 80\% power}$$

$$p_1 - p_2 = \text{Difference in proportion in the two different groups} = 7.4\%$$

$$P = \text{Pooled prevalence} = [\text{Proportion in Placebo } (p_1) + \text{Proportion in Dexmedetomidine Group } (p_2)]/2 = [2 + 9.4]/2 = 5.7$$

$$n = \frac{2 \times 5.7 \times 94.3 (1.96 + 0.84)^2}{7.4 \times 7.4} = 153 \text{ in each group}$$

$$7.4 \times 7.4$$

Hence the total sample size was found to be 306 (153 + 153).

The patients were included for the study based on the inclusion and exclusion criteria mentioned as follows: -

The patients were included for the study based on the inclusion and exclusion criteria mentioned as follows: -

Inclusion criteria

1. Patient willing to give informed consent for the study (annexure-1)
2. Diagnosis as per CDC guidelines

3. All patients aged >18 years and <60 years undergoing elective open abdominal surgeries (clean and clean contaminated cases)

Exclusion criteria

1. Patient not willing to give informed consent for the study
2. All contaminated and infective cases
3. Patients on prolonged antibiotic therapy
4. Immunocompromised conditions
5. Patients on steroids
6. Uncontrolled diabetes mellitus
7. Patients with multiorgan failure

Method of collection of data

All patients undergoing elective open abdominal surgeries (clean and clean contaminated cases) were included in the present study. Patients were randomized into two groups using a computer-generated allotment number. Skin preparation was done using a 5% povidone solution for both the groups. The first group had hair removal by hair clipper, while the second group had hair removal by razor shaving carried out on the morning of proposed surgery, both 2 hours prior to skin incision by the nursing staff. The presence of any skin injuries, erythema, rash, adequacy of hair removal was recorded on an assessment form kept in a sealed envelope bearing only the patients hospital number was noted. The type of operation performed and its duration, type and length of anaesthesia, method of skin closure as well as suture materials was recorded for each patient. All patients were administered antibiotics 1 hour prior to skin incision on the proposed day of surgery and continued till 24 hours postoperatively and then stopped. All patients were assessed post operatively for the presence of wound infection.

A modification of the Southampton wound infection scoring system was used for grading infection. All patients were followed up and the operative site was assessed post operatively on day 2, day 5 and day 7 and were followed for a maximum period of 30 days for any wound infection. Dressings was opened early in case of any wound soakage, pain and fever.

Assessment tools

Modified Southampton wound assessment scale was used for grading infection.

All the observations were entered in the predesigned proforma

Outcome measures

The rate of SSI among the two study groups in which preoperative skin preparation was done with razor and clipper, and where wound infection occurred, grading was done using Southampton grading system.

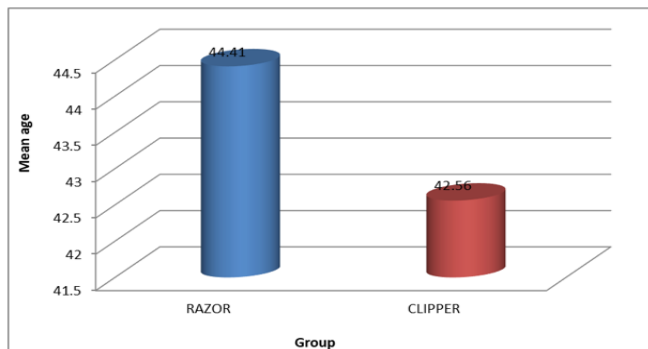
Statistical analysis

Data was entered in MS excel and analysed using SPSS 21.0 version software. Qualitative data was presented in the form of Proportions and pie diagrams, bar charts as used to represent graphically. Quantitative data was presented as mean, standard deviation. Student's t test was used as the test of significance for quantitative data and chi-square test was used to analyse the test of significance for qualitative data. p value <0.05 was considered as statistically significant.

Observations and results

Table 1: Age of study groups

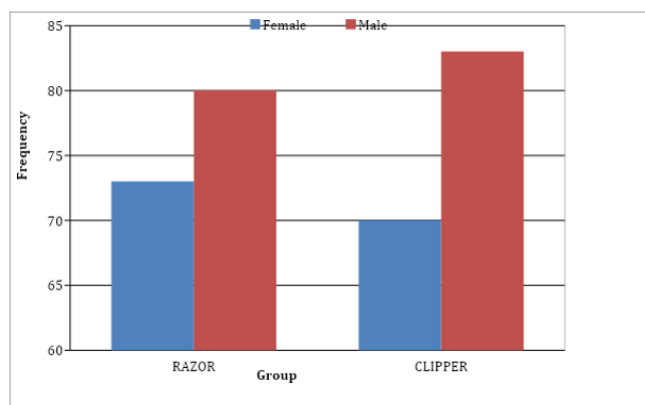
HAIR REMOVAL	COUNT	MEAN	STANDARD DEVIATION	P-VALUE
RAZOR	153	44.41	12.297	0.197
CLIPPER	153	42.56	12.710	



In the above study, mean age of subjects in razor group and clipper group was 44.41+/-12.297 and 42.56+/-12.710 respectively. Student t test was applied and p-value of 0.197 was obtained. Therefore, no significant difference found.

Table 2: Gender of study groups

GENDER	RAZOR	CLIPPER	TOTAL	P-VALUE
FEMALE	73	70	143	0.731
MALE	80	83	163	
TOTAL	153	153	306	

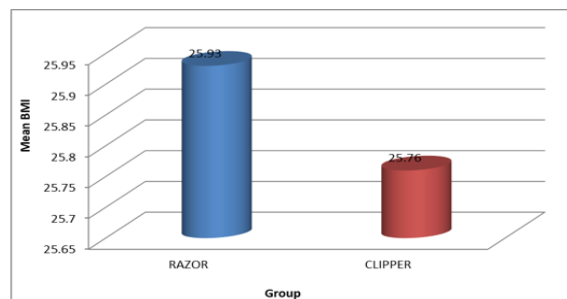


In the above study, Razor group had 80 males and 73 female patients. Clipper group had 83 males and 70

female patients. Chi square test was applied and p-value of 0.731 was obtained. Therefore, no significant difference found.

Table 3: Body Mass Index of study groups

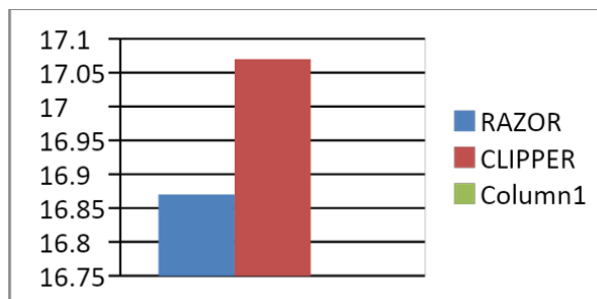
HAIR REMOVAL METHOD	COUNT	MEAN	STANDARD DEVIATION	P-VALUE
RAZOR	153	25.93	4.409	0.730
CLIPPER	153	25.76	4.20	



In The Above Study, Mean BMI Of Subjects In Razor Group And Clipper Group Was 25.93+/-4.409 And 25.76+/-4.20 Respectively. Student T Test Was Applied And P- Value Of 0.730 Was Obtained. Therefore, No Significant Difference Found.

Table 4: Blood Urea Nitrogen in study groups

HAIR REMOVAL METHOD	COUNT	MEAN	STANDARD DEVIATION	P-VALUE
RAZOR	153	16.87	2.717	0.526
CLIPPER	153	17.071	2.690	

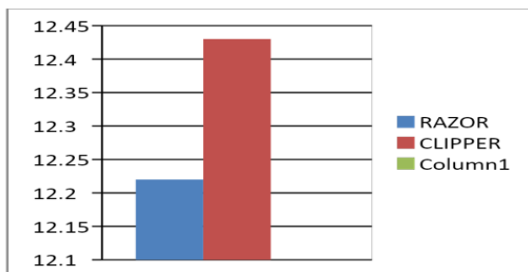


In The Above Study, Mean BUN Of Subjects in Razor Group and Clipper Group Was 16.87+/-2.717 And

17.071+/-2.690 Respectively. Student T Test Was Applied And P- Value Of 0.526 Was Obtained. Therefore, No Significant Difference Found.

Table 5: Hemoglobin in study groups

HAIR REMOVAL METHOD	COUNT	MEAN	STANDARD DEVIATION	P-VALUE
RAZOR	153	12.222	1.944	0.346
CLIPPER	153	12.431	1.932	



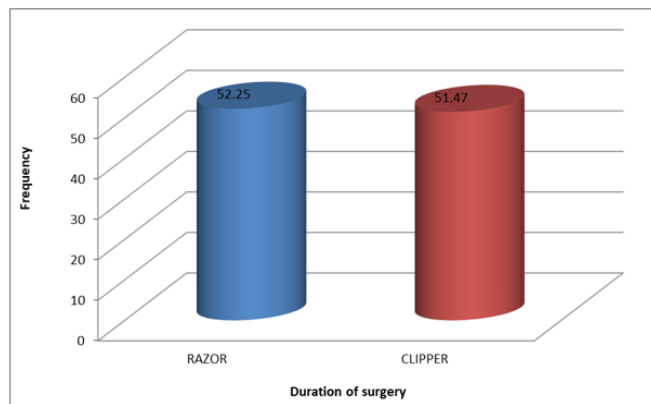
In the above study, mean Haemoglobin of subjects in Razor group and clipper group was 12.22+/-1.944 and 12.431+/-1.932 respectively. Student t test was applied and p- value of 0.346 was obtained. Therefore, no significant difference found.

Table 6: Type of surgeries

GROUPS	DIAGNOSIS	TYPE OF SURGERIES	FREQUENCY	PERCENT
GROUP A	CHOLELITHIASIS	LAPAROSCOPIC CHOLECYSTECTOMY	73	23.9
GROUP B	INGUINAL HERNIA	LICHTENSTEIN TENSION FREE MESH REPAIR	81	26.5
GROUP C	APPENDICITIS	OPEN APPENDICECTOMY	56	18.3
GROUP D	PARAUMBILICAL HERNIA	OPEN ONLAY MESH REPAIR	27	8.8

GROUP E	UMBILICAL HERNIA	OPEN ONLAY MESH REPAIR	43	14.1
GROUP F	INCISIONAL HERNIA	OPEN ONLAY MESH REPAIR	16	5.2
GROUP G	CARCINOMA COLON	HEMICOLECTOMY	6	2.0
GROUP H	EPIGASTRIC HERNIA	OPEN ONLAY MESH REPAIR	4	1.3
		TOTAL	306	100.0

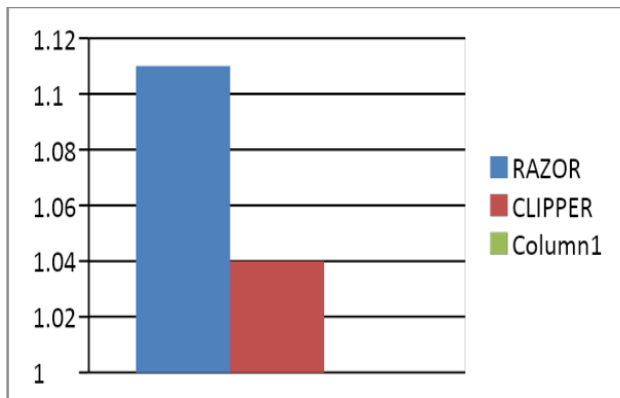
HAIR REMOVAL METHOD	COUNT	MEAN	STANDARD DEVIATION	P-VALUE
RAZOR	153	52.25	13.46	0.614
CLIPPER	153	51.47	13.73	



In The Above Study, Mean Duration of Surgery for Subjects in Razor Group and Clipper Group Was 52.25+/-13.46 And 51.47+/-13.73 Respectively. Student T Test Was Applied And P- Value Of 0.614 Was Obtained. Therefore, No Significant Difference Found.

Table 8: Prehospital duration of stay (in days)

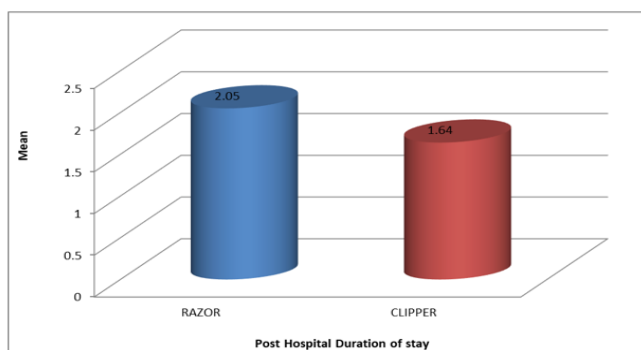
HAIR REMOVAL METHOD	COUNT	MEAN	STANDARD DEVIATION	P-VALUE
RAZOR	153	1.111	0.372	0.078
CLIPPER	153	1.045	0.265	



In the above study, mean Days of pre hospitalization of subjects in Razor group and clipper group was 1.111+/-0.372 and 1.045+/-0.265 respectively. Student t test was applied and p- value of 0.078 was obtained. Therefore, no significant difference found.

Table 9: Post Hospital Duration of stay (in days)

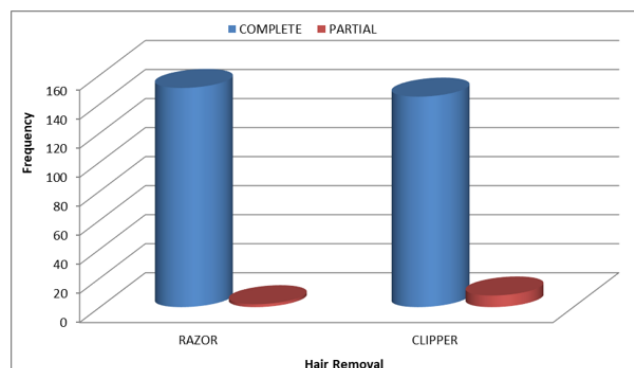
HAIR REMOVAL METHOD	COUNT	MEAN	STANDARD DEVIATION	P-VALUE
RAZOR	153	2.05	1.704	0.019
CLIPPER	153	1.64	1.269	



In The Above Study, Mean Days of Post Operation of Subjects in Razor Group and Clipper Group Was 2.05+/-1.704 And 1.64+/-1.269 Respectively. Student T Test Was Applied And P- Value Of 0.019 Was Obtained. Therefore, Significant Difference Found.

Table 10: Hair Removal

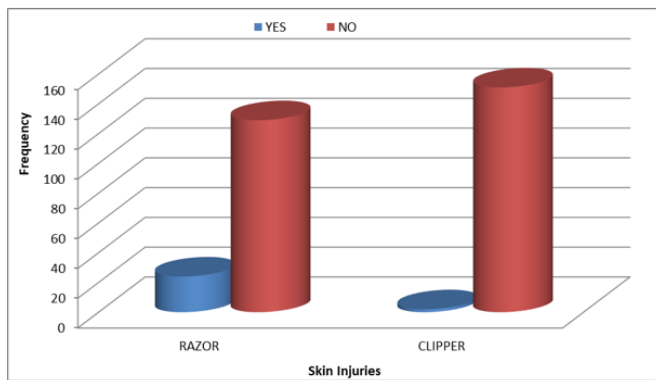
HAIR REMOVAL	RAZOR	CLIPPER	TOTAL	P-VALUE
COMPLETE	151	145	296	0.054
PARTIAL	2	8	10	
TOTAL	153	153	306	



In the above study, in razor group 151 patients had complete hair removal and 2 patients had partial removal of hair. In Clipper group 145 patients had complete removal of hair and 8 patients had partial removal of hair. Chi square test was applied and p-value of 0.054 was obtained. Therefore, no significant difference found.

Table 11: Skin Injuries

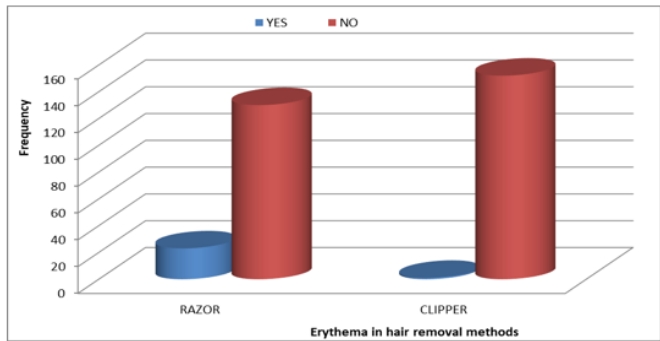
SKIN INJURIES	RAZOR	CLIPPER	TOTAL	P-VALUE
YES	24	2	26	0.001
NO	129	151	280	
TOTAL	153	153	306	



In the above study, 24 patients in the razor group had skin injury and 2 patients in the clipper group had skin injury. Chi Square test was applied and p-value of 0.001 was obtained. Therefore, significant difference found.

Table 12: Erythema in hair removal methods

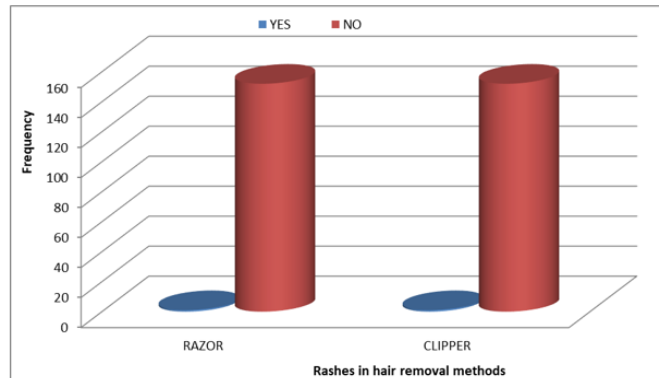
ERYTHEMA	RAZOR	CLIPPER	TOTAL	P-VALUE
YES	23	1	24	0.001
NO	130	152	282	
TOTAL	153	153	306	



In The Above Study, 23 Patients in The Razor Group Had Erythema and In Clipper Group 1 Patient Had Skin Erythema. Chi Square Test Was Applied And P-Value Of 0.001 Was Obtained. Therefore, Significant Difference Found.

Table13: Rashes in hair removal methods

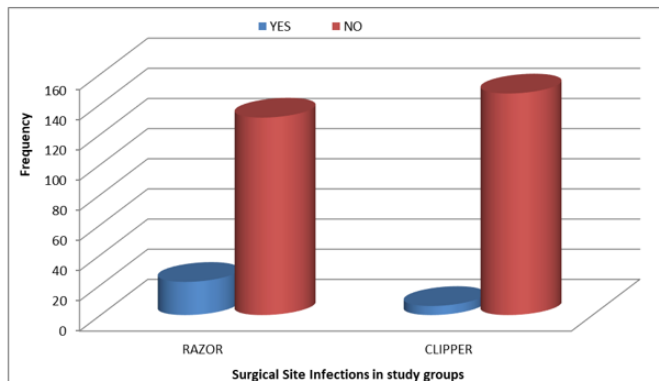
RASHES	RAZOR	CLIPPER	TOTAL	P-VALUE
YES	1	1	2	1.00
NO	152	152	304	
TOTAL	153	153	306	



In The Above Study, 1 Patient in The Razor Group And 1 Patient in Clipper Group Had Skin Rashes. Chi Square Test Was Applied And P-Value Of 1.00 Was Obtained. Therefore, No Significant Difference Found.

Table 14: Surgical Site Infections in study groups

SSI	RAZOR	CLIPPER	TOTAL	P-VALUE
YES	22	6	28	0.002
NO	131	147	278	
TOTAL	153	153	306	

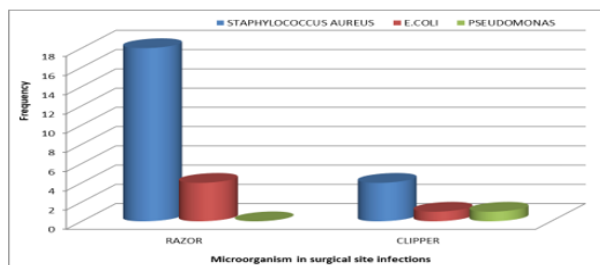


In The Above Study, 22 Cases in Razor Group Had SSI And 131 Cases Did Not Have SSI. Clipper Group Had 6

SSI Cases And 147 Cases Did Not Have SSI. Chi Square Test Was Applied And P-Value Of 0.002 Was Obtained. Therefore, Statistically Significant Difference Exists Between Two Groups.

Table 15: Microorganism in surgical site infections in study groups

MICROORGA NISM	RAZOR	CLIPPER	TOTAL	P-VALUE
STAPHYLOC OCCUS AUREUS	18	4	22	0.149
<u>E.COLI</u>	4	1	5	0.199
PSEUDOMON AS	0	1	1	0.182
TOTAL	22	6	28	0.14



In the above study groups, Staphylococcus Aureus was grown in 18 patients of Razor group and 4 patients of clipper group. Further E. Coli was grown in 4 patients of razor and 1 patient of clipper group. Pseudomonas was grown in 1 patient of clipper group. There was no statistically difference between the groups regarding incidence of any particular microorganism.

Discussion

The Present Study Was Carried Out On 306 Patients Admitted in Department of General Surgery, ESI MC & PGIMSR, Bangalore, Among the Patients Who Were Planned to Undergo Elective Surgery During the Time Period of March 2021 to August 2022, Comparing Two Methods of Hair Removal (Razor Technique and

Clipping) And Its Effects on Surgical Site Wound Infection.

We Observed in Our Study, Mean Age of Subjects in Razor Group and Clipper Group Was 44.41+/-12.297 And 42.56+/-12.710 Respectively. Student T Test Was Applied And P-Value Of 0.197 Was Obtained. Therefore, No Significant Difference Found.

In Our Study, Razor Group Had 80 Males And 73 Female Patients. Clipper Group Had 83 Males And 70 Female Patients. Chi Square Test Was Applied And P-Value Of 0.731 Was Obtained. Therefore, No Significant Difference Found.

In Our Study, Mean BMI Of Subjects In Razor Group And Clipper Group Was 25.93+/-4.409 And 25.76+/-4.20 Respectively. Student T Test Was Applied And P-Value Of 0.730 Was Obtained. Therefore, No Significant Difference Found.

In Our Study, Mean BUN Of Subjects in Razor Group and Clipper Group Was 16.87+/-2.717 And 17.071+/-2.690 Respectively. Student T Test Was Applied And P-Value Of 0.526 Was Obtained. Therefore, No Significant Difference Found.

In Our Study, Mean Haemoglobin of Subjects in Razor Group and Clipper Group Was 12.22+/-1.944 And 12.431+/-1.932 Respectively. Student T Test Was Applied And P- Value Of 0.346 Was Obtained. Therefore, No Significant Difference Found.

In Our Study Laparoscopic Cholecystectomy, Open Appendicectomy, Lichtenstein Tension Free Hernia Repair and Open Onlay Mesh Repair Were Commonest Surgeries Performed on Both the Groups.

In Our Study, Mean Duration of Surgery for Subjects in Razor Group and Clipper Group Was 52.25+/-13.46 And 51.47+/-13.73 Respectively. Student T Test Was

Applied And P- Value Of 0.614 Was Obtained. Therefore, No Significant Difference Found.

In Our Study, Mean Days of Pre-Hospitalisation of Subjects in Razor Group and Clipper Group Was 1.111+/-0.372 And 1.045+/-0.265 Respectively. Student T Test Was Applied And P- Value Of 0.078 Was Obtained. Therefore, No Significant Difference Found.

In Our Study, Mean Days of Post Operation of Subjects in Razor Group and Clipper Group Was 2.05+/-1.704 And 1.64+/-1.269 Respectively. Student T Test Was Applied And P- Value Of 0.019 Was Obtained. Therefore, Significant Difference Found.

In Our Study, In Razor Group 151 Patients Had Complete Hair Removal And 2 Patients Had Partial Removal of Hair. In Clipper Group 145 Patients Had Complete Removal of Hair And 8 Patients Had Partial Removal of Hair. Chi Square Test Was Applied And P- Value Of 0.054 Was Obtained. Therefore, No Significant Difference Found.

In Our Study, 24 Patients in The Razor Group Had Skin Injury And 2 Patients in The Clipper Group Had Skin Injury. Chi Square Test Was Applied And P-Value Of 0.001 Was Obtained. Therefore, Significant Difference Found.

In Our Study, 23 Patients in The Razor Group Had Erythema and In Clipper Group 1 Patient Had Skin Erythema. Chi Square Test Was Applied And P-Value Of 0.001 Was Obtained. Therefore, Significant Difference Found.

In Our Study, 1 Patient in The Razor Group And 1 Patient in Clipper Group Had Skin Rashes. Chi Square Test Was Applied And P-Value Of 1.00 Was Obtained. Therefore, No Significant Difference Found.

In our study, 22 cases in Razor group had SSI and 131 cases did not have SSI. Clipper group had 6 SSI cases

and 147 cases did not have SSI. Chi Square test was applied and p-value of 0.002 was obtained. Therefore, statistically significant difference exists between two groups.

Author	SSI With Clipper	SSI With Razor
Our Study	3.9 %	14.4 %
Mahanth H M et al ,2017	2.82 %	12.16 %
Varia DM et al ,2016	4.89%	9.39%
Balthazar ER et al ,1985	1 %	2 %
Alexander JW et al ,1981	2.6 %	4.5 %

We Compared Results of Our Study Regarding SSI In 2 Groups- Clipper and Razor Method, With Previous Studies. We Found That Our Study Had SSI Rate Of 3.9% With Clipper. Studies By Mahanth HM Et Al (2017), Balthazar ER Et Al (1985), Alexander JW Et Al (1981) Had Lower Rate of Ssi with Clipper Than Us, Whereas Varia DM Et Al (2016) Had Higher Rate Of SSI With Clipper Than Us.⁴

In Reference to SSI In Razor Group We Found That Our Study Had SSI Rate Of 14.4%. Studies By Mahanth HM Et Al (2017), Varia DM Et Al (2016), Balthazar ER Et Al (1985) & Alexander JW Et Al (1981) Had SSI Rates Lower Than Our Study.^{5,6,7}

We Also Noted That in Previously Enumerated Studies, Almost All Studies Reported Higher Rates of SSI With Razor Than Clipping Method of Hair Removal. Clipping Method Was Reported to Have Least Incidence Of SSI. Our Study Also Shared Similar Result.

Razors Can Rapidly Remove Hair from Surgical Field, But May Result In Small Cuts And Abrasions. This Minor Skin Damage Can Provide An Area Where Bacteria Flora Can Multiply And Potentially Infect The Surgical Incision Site. An Alternative to Using Razor Is Powered Surgical Clippers. Clippers Mechanically Trim Hairs Close to Skin, Effectively Removing It from The Field and Avoid Skin Trauma Caused by Sharp Blade of Razor.² Clipping Hair Immediately Before an Operation Also Has Been Associated with A Lower Risk of SSI Than Shaving or Clipping the Night Before an Operation.⁸

Skin Injury

Regarding Skin Injury in Our Study, We Found That 24(15.7%) Patients in The Razor Group And 2 (1.3%) Patients In The Clipper Group Had Skin Injury And Significant Difference Was Found.

AUTHOR	SKIN INJURIES WITH CLIPPER	SKIN INJURIES WITH RAZOR
Our study	1.3 %	15.7 %
Mahanth HM et al ,2017	0	10.8 %
Omolabake BI et al ,2020	5%	29%

We Found That Our Study Had 1.3% Cases of Skin Injury with Clipper And 15.7% Cases of Skin Injury with Razor. Study By Mahanth HM Et Al (2017) Showed 0% Skin Injury with Clipper And 10.8% Cases of Skin Injury with Razor. Study By Mahanth HM Et Al (2017) Had Lower Skin Injury with Clipper and Razor Method When Compared with Our Study.

In A Study by Omolabake Et Al (2020) Showed 5% Skin Injury with Clipper And 29% Skin Injury with Razor.Study by Omolabake BI Et Al (2020) Had Higher Skin Injury with Clipper and Razor Method When Compared with Our Study.

Relatively Higher Percentage of Skin Injury in Our Study Can Be Ascribed to Paramedical Staff Performing Procedure.⁹

ADEQUACY OF HAIR REMOVAL

AUTHOR	CLIPPER	RAZOR
Our study	94.8 %	98.7 %
Mahanth HM et al (2017)	91.25%	94.39 %
Omolabake BI et al (2020)	82%	96%

Our Study Found That in The Clipper Group 145(94.8%) Patients Had Complete Removal of Hair And 8 Patients Had Partial Removal of Hair. In The Razor Group, 151(98.7%) Patients Had Complete Removal of Hair And 2 Patients Had Partial Removal of Hair. No Statistically Significant Difference Was Found in Our Study Between the Groups.

In A Study Conducted by Mahanth HM Et Al (2017) 91.25% Patients Had Complete Removal of Hair by Clipper And 94.39% Of Patients Had Complete Removal of Hair by Razor Method, Slightly Lower Percentage of Complete Removal of Hair Than Our Study.

In A Study Conducted by Omolabake BI Et Al (2020) 82% Patients Had Complete Removal of Hair by Clipper And 96% Of Patients Had Complete Removal of Hair by Razor Method, Lower Percentage of Complete Removal of Hair by Both Clipper and Razor When Compared with Our Study.³ Training and Knowledge of The Procedure Probably Adds to The Efficiency of The Technique.

Conclusion

This Study Demonstrates That Post Operative Wound Infection Is Strongly Associated with Presence of Skin Injuries Inflicted During Preoperative Hair Removal Commonly After Razor Shaving. It Shows That Clipping

Is Superior to Razor Shaving for Preoperative Hair Removal in Our Setting. From This Study the Patients Who Had Wound Infection Had Prolonged Hospital Stay Post Procedure. We Recommend Larger Population, Multicenter, Randomized Controlled Studies to Further Investigate the Relationship of Postoperative Wound Infection to The Method of Preoperative Hair Removal Observed in This Study.

Summary

Surgical Site Infections (SSIS) Are A Leading Cause of Healthcare-Associated Infections (Hais).

These Infections Can Range In Severity From Nuisance To Life Threatening; Overall, They Contribute To Substantial Patient Suffering. A Large Portion of Ssis Are Preventable, And Ssi Prevention Is a Key Patient Safety Matter That Requires Teamwork Among Multiple Health Care Personnel, Including Surgeons, Nurses, Anesthetists, And Infection Preventionists.

The Present Study Objective Was to Evaluate Clipper Vs Razor Method of Hair Removal in Preoperative Skin Preparation and Its Effects on Surgical Site Infection. It Was a Prospective Randomized Control Study Conducted in Esic Mc & Pgimsr. A Total Of 306 Patients Fulfilling Inclusion and Exclusion Criteria and Admitted in The Department of General Surgery, Esic Mc & Pgimsr Bangalore Between March 2021 to August 2022 Were Included in The Study. The Study Population Was Divided Into 2 Groups: 153 Patients Each Group Who Were Prepared with Razor Method for Removal of Hair Over Surgical Site and Clipper Removal of Hair. Mean Age of Subjects in Razor Group and Clipper Group Was 44.41+/-12.29 And 42.56+/-12.71 Respectively. The Razor Group Had 80 Male And 73 Female Patients. The Clipper Group Had 83 Male And 70 Female Patients. Mean Bmi of Subjects in Razor

Group and Clipper Group Was 25+/-4.40 And 25.76+/-4.20 Respectively.

In Razor Group 151 Patients Had Complete Removal of Hair And 2 Patients Had Partial Removal of Hair. In Clipper Group 145 Patients Had Complete Removal of Hair And 8 Patients Had Partial Removal of Hair. 24 Patients in Razor Group Had Skin Injury And 2 Patients in Clipper Group Had Skin Injury. 22 Patients in Razor Group Had Ssi And 6 Patients in Clipper Group Had Ssi. Staphylococcus Aureus Was Grown In 18 Patients of Razor Group And 4 Patients of Clipper Group. Further E. Coli Was Grown In 4 Patients of Razor Group And 1 Patient of Clipper Group. Pseudomonas Was Grown In 1 Patient of Clipper Group. Overall Incidence of SSI Among the Study Group Was 9.15%. Patients Treated with Razor Method of Hair Removal Had 14.3% Incidence of SSI and Patients Treated with Clipper Method of Hair Removal Had 3.92% Incidence of SSI.

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