**Journal of Neonatal Surgery**
***ISSN(Online): 2226-0439***
***Vol. 14, Issue 8s (2025)***
*https://www.jneonatalsurg.com*

OPEN ACCESS

# Comparative Study of Antimicrobial (Triclosan) Coated Versus Conventional Suture Material in Preventing Surgical Site Infections

**Dr. Deepak V[1], Dr. J. Sathyanarayana Murthy[*2], Dr. Arun Balaji MS[*3], Dr. A.P. Subburaaj MS[*4], Dr. J. Sridhar MS[*5]**

[1]Postgraduate, Dept of General Surgery, Vinayaka Mission's Kirupananda Variyar Medical College & Hospital, Salem Vinayaka Mission's Research Foundation Deemed to be University, Tamil Nadu, India.

[2]Senior Resident, Dept of General Surgery, Vinayaka Mission's Kirupananda Variyar Medical College & Hospital, Salem Vinayaka Mission's Research Foundation Deemed to be University, Tamil Nadu, India.

***Corresponding Author:**

[*3]Associate Professor, Dept of General Surgery Vinayaka Mission's Kirupananda Variyar Medical College & Hospital, Salem Vinayaka Mission's Research Foundation Deemed to be University, Tamil Nadu, India.

Email ID: drarunbalaji87@gmail.com

[*4]Professor, Dept of General Surgery, Vinayaka Mission's Kirupananda Variyar Medical College & Hospital, Salem Vinayaka Mission's Research Foundation Deemed to be University, Tamil Nadu, India.

[*5]Professor and HOD, Dept of General Surgery Vinayaka Mission's Kirupananda Variyar Medical College & Hospital, Salem Vinayaka Mission's Research Foundation Deemed to be University, Tamil Nadu, India.

Cite this paper as: Dr. Deepak V, Dr. J. Sathyanarayana Murthy, Dr. Arun Balaji MS, Dr. A.P. Subburaaj MS, Dr. J. Sridhar MS, (2025) Comparative Study of Antimicrobial (Triclosan) Coated Versus Conventional Suture Material in Preventing Surgical Site Infections. *Journal of Neonatal Surgery*, 14 (8s), 788-796.

## ABSTRACT

**Background and Objectives:** Surgical site infections (SSIs) remain a prevalent complication across various surgical procedures, leading to increased morbidity, prolonged hospital stays, and financial burdens on healthcare systems. This study aims to evaluate the efficacy of antimicrobial (triclosan) coated suture material compared to conventional sutures in reducing SSIs when used for subcutaneous closure.

**Methods:** A prospective observational study was conducted over 18 months at Vinayaka Missions Kirupananda Variyar Medical College and Hospital, Salem. A total of 200 patients undergoing day-care surgical procedures were divided into two groups: Group A (n=100) received conventional 2-0 vicryl sutures, while Group B (n=100) received triclosan-coated 2-0 vicryl sutures for subcutaneous closure. Patients were followed up for two months to assess the incidence of SSIs. Data were analyzed using SPSS 23.0, employing statistical methods such as frequency counts, percentages, and the Chi-square test.

**Results:** The age distribution was similar in both groups (Mean ± SD: 50.39 ± 17.32 years in Group A and 51.56 ± 15.85 years in Group B, p=0.61). Gender distribution was also comparable (p=0.67). Diagnoses included lipoma, hydrocele, sebaceous cyst, fibroadenoma, and dermoid cyst, with no significant difference between groups (p=0.97). The prevalence of Type II Diabetes Mellitus was significantly higher in the control group (p<0.0001). At the first follow-up, the normal healing rate was significantly higher in Group B (85% vs. 50% in Group A, p<0.0001). The need for additional treatments such as absorbent dressing and culture & sensitivity testing was lower in the triclosan-coated suture group (p=0.0006). By the second follow-up, 89% of patients in Group B had a healthy scar with complete wound healing, whereas 75% in Group A exhibited normal healing patterns (p=0.002).

**Conclusion:** The use of antimicrobial (triclosan) coated sutures significantly reduces the incidence of SSIs, improves wound healing, and minimizes the need for additional interventions. Triclosan-coated sutures are a promising option for improving surgical outcomes, particularly in patients with high-risk factors for SSIs.

***Keywords:*** *Surgical Site Infection, Triclosan Coated Sutures, Antimicrobial Sutures, Wound Healing, Vicryl, Postoperative Infection Prevention, Comparative Study*

## 1. INTRODUCTION

Surgical site infections (SSIs) are a prevalent complication across all surgical procedures. These infections occur in tissues, organs, or spaces exposed by surgeons during invasive procedures. SSIs manifest when microorganisms invade tissues within either 30 days for superficial layers or 30 to 90 days for deep layers post-surgery.[1] Further, SSIs are categorized into superficial and deep infections. Superficial SSIs affect the skin and superficial fascia, while deep SSIs involve infection of the fascial and muscular layers. Additionally, organ/space SSIs infect any tissue below the fascial layer involved in the surgical procedure within 30 or 90 days after surgery.[2]

The global occurrence of SSI varies from 0.5 to 15%, whereas in India, there's a notable rise ranging from 23 to 38%.[3] SSIs rank as the second most common nosocomial infection, following urinary tract infection. Approximately 5% of all surgical complications are attributed to SSIs, and they contribute to 20% of all healthcare-associated infections.[4] SSIs are linked with prolonged hospital stays and heightened morbidity and mortality rates. Moreover, apart from significantly impacting patient care and outcomes, SSIs also impose substantial financial burdens on healthcare providers.

The likelihood of SSI occurrence post-surgery hinges on the virulence of microorganisms and their inoculum size.[5] Risk escalates with increased dead space, hematoma, or devitalized tissue resulting from inadequate surgical procedures. This risk extends to any foreign material introduced, such as drains or sutures. Patients with high BMI, a history of alcoholism, chronic renal disease, and diabetes are notably prone to SSI development ,[6] primarily due to their compromised immune function leading to delayed wound healing. The nature of the wound and surgery also plays a pivotal role; contaminated wounds undergoing emergency procedures (e.g., emergency abdominal laparotomy) are at higher risk of SSI compared to elective surgeries on clean injuries (e.g., hysterectomy). This disparity arises from microorganisms present in contaminated wounds potentially entering the bloodstream, thus increasing the likelihood of SSI. Symptoms of these infections include pain, erythema, fever, pus, or wound discharge, as well as wound dehiscence[7].

At present, triclosan is present in a variety of skincare or personal care products, including hand soaps, shower gels, mouthwashes, deodorant soaps, and toothpastes. Its use in the healthcare industry began in 1972 with surgical scrubs.[8] Additionally, triclosan has been integrated into other medical products such as hand rubs, skin antiseptics, ointments, impregnated/coated catheters, and sutures.[9]

The study aims to compare the usage of antimicrobial (triclosan) coated suture material and conventional suture material for closing the subcutaneous plane in preventing surgical site infection.

## 2. MATERIALS AND METHODS

It was a Prospective Observational study through Periodic sampling conducted at Vinayaka Missions Kirupananda, Variyar Medical College and Hospital, Salem between 18 months. Sample size was 200

**Inclusive criteria:**

1. Age >18 years
2. Patients who were willing for the treatment
3. Patients gave consent & follow-up

**Exclusive criteria**

1. Age >65 years
2. Not willing for treatment.
3. Reactive status

**Methodology**

A comparative study on effect of usage of triclosan coated suture material was divided into two groups

**Group a** was treated with conventional vicryl suture and

**Group b** was treated with TRICLOSAN COATED vicryl

Patients were followed up to 2 months after a day care surgical procedure for occurrence of any surgical site infection and incidence was compared with a proposed sample size of 200 patients (100 cases and 100 controls)

Group A was containing the data of patients who were treated for day care surgeries and subcutaneous closure done by conventional 2-0 vicryl

Group B was containing 100 patients who were treated for day care surgeries and subcutaneous layer closure done by TRICLOSAN COATED 2-0 VICRYL for closing subcutaneous plane

Both group results were compared and calculated

**Statistical analysis:**

Data collected from the study was computed and analysed using the appropriate statistical methods such as continuous variables, percentages , frequency counts and Chi square test by using latest SPSS 23.0 software.

## 3. RESULT

**Table 1: Distribution of patients according to age.**

| Age distribution | Case Group | | Control Group | |
|---|---|---|---|---|
| | No. of patients | Percentage | No. of patients | Percentage |
| 17-40 | 32 | 32 | 31 | 31 |
| 41-60 | 38 | 38 | 35 | 35 |
| >60 | 30 | 30 | 34 | 34 |
| Total | 100 | 100 | 100 | 100 |
| Mean±SD | 50.39±17.32 | | 51.56±15.85 | |
| P-value | 0.61 | | | |

The age distribution analysis compares two groups: the Case Group and the Control Group. In the Case Group, which likely pertains to individuals with a specific condition or under study, there were 32 patients aged between 17 to 40 years, 38 patients aged between 41 to 60 years, and 30 patients aged over 60 years. Conversely, in the Control Group, consisting of presumably healthy individuals or those unaffected by the condition under study, there were 31 patients aged 17 to 40 years, 35 patients aged 41 to 60 years, and 34 patients aged over 60 years.

**Table 2: Distribution of patients according to gender.**

| Gender distribution | Case Group | | Control Group | | P-value |
|---|---|---|---|---|---|
| | No. of patients | Percentage | No. of patients | Percentage | |
| Male | 49 | 49 | 46 | 46 | 0.67 |
| Female | 51 | 51 | 54 | 54 | |
| Total | 100 | 100 | 100 | 100 | |

The data compares gender distributions between two groups: the Case Group and the Control Group. In the Case Group, there were 49 males and 51 females, while the Control Group consisted of 46 males and 54 females.

**Table 3: Distribution of patients according to diagnosis.**

| Diagnosis | Case Group | | Control Group | | P-value |
|---|---|---|---|---|---|
| | No. of patients | Percentage | No. of patients | Percentage | |
| Lipoma | 34 | 34 | 36 | 36 | 0.97 |
| Hydrocele | 23 | 23 | 24 | 24 | |
| Sebaceous cyst | 11 | 11 | 12 | 12 | |
| Fibroadenoma | 23 | 23 | 19 | 19 | |
| Dermoid cyst | 9 | 9 | 9 | 9 | |
| Total | 100 | 100 | 100 | 100 | |

The comparison involves diagnoses across two groups: the Case Group and the Control Group. In the Case Group, which likely consists of patients diagnosed with specific conditions, there were 34 cases of Lipoma, 23 of Hydrocele, 11 of Sebaceous cysts, 23 of Fibroadenoma, and 9 of Dermoid cysts. Similarly, in the Control Group, representing individuals without these specific conditions or considered healthy, there were 36 cases of Lipoma, 24 of Hydrocele, 12 of Sebaceous cysts, 19 of Fibroadenoma, and 9 of Dermoid cysts.

**Table 4: Distribution of patients according to comorbidities.**

| Comorbidities | Case Group | | Control Group | | P-value |
|---|---|---|---|---|---|
| | No. of patients | Percentage | No. of patients | Percentage | |
| TYPE II DM | 7 | 7 | 39 | 39 | <0.0001 |

The comparison of comorbidities between the Case Group and Control Group shows significant differences in the prevalence of Type II Diabetes Mellitus (DM). In the Case Group, there were 7 patients with Type II DM, whereas in the Control Group, there were 39 patients.

**Table 5: Distribution of patients according to 1st follow up.**

| Follow up 1 | Case Group | | Control Group | | P-value |
|---|---|---|---|---|---|
| | No. of Patients | Percentage | No. of Patients | Percentage | |
| Grade I a | 2 | 2 | 5 | 5 | <0.0001 |
| Grade I b | 2 | 2 | 3 | 3 | |
| Grade I c | 0 | 0 | 3 | 3 | |

| | | | | | |
|---|---|---|---|---|---|
| Grade II a | 1 | 1 | 4 | 4 | |
| Grade II b | 3 | 3 | 0 | 0 | |
| Grade II c | 0 | 0 | 2 | 2 | |
| Grade II d | 0 | 0 | 2 | 2 | |
| Grade III a | 2 | 2 | 4 | 4 | |
| Grade III b | 0 | 0 | 4 | 4 | |
| Grade III c | 1 | 1 | 0 | 0 | |
| Grade III d | 0 | 0 | 4 | 4 | |
| Grade IV a | 0 | 0 | 7 | 7 | |
| Grade IV b | 3 | 3 | 10 | 10 | |
| Grade IV c | 0 | 0 | 0 | 0 | |
| Grade IV d | 0 | 0 | 0 | 0 | |
| Grade V | 1 | 1 | 2 | 2 | |
| Normal Healing | 85 | 85 | 50 | 50 | |
| Total | 100 | 100 | 100 | 100 | |

The follow-up data compares outcomes across different grades and normal healing between the Case Group and Control Group. In the Case Group, which likely involves patients under specific medical management or study, the distribution across various grades and normal healing includes instances like Grade I a (2), Grade II a (1), Grade III a (2), Grade IV b (3), and Grade V (1). Normal healing was observed in 85 patients. Conversely, the Control Group, potentially representing a baseline or comparison group, shows different distributions across the same grades, such as Grade I a (5), Grade II a (4), Grade III a (4), Grade IV b (10), and Grade V (2), and also indicates healing was These differences highlight varied responses and progressions in each group

**Table 6: Distribution of patients according to treatment at follow up 1.**

| Treatment (Follow up 1) | Case Group | | Control Group | | P-value |
|---|---|---|---|---|---|
| | No. of Patients | Percentage | No. of Patients | Percentage | |
| Absorbent dressing done | 2 | 2 | 12 | 12 | 0.0006 |
| Sent for C&S | 3 | 3 | 23 | 23 | |

| | | | | | |
|---|---|---|---|---|---|
| Topical throbophobe applied | 6 | 6 | 2 | 2 | |

The treatment comparison between the Case Group and Control Group at follow-up shows varying approaches. In the Case Group, which likely includes patients under specific medical management or study, treatments included absorbent dressing done for 2 patients, sending 3 patients for C&S (Culture and Sensitivity testing), and applying topical throbophobe for 6 patients. Conversely, in the Control Group, treatments involved absorbent dressing done for 12 patients, sending 23 patients for C&S, and applying topical throbophobe for 2 patients.

**Table 7: Distribution of patients according to inspection on follow up 2.**

| Follow up 2 | Case Group | | Control Group | | P-value |
|---|---|---|---|---|---|
| | No. of Patients | Percentage | No. of Patients | Percentage | |
| Grade I a | 11 | 11 | 3 | 3 | 0.002 |
| Grade I b | 0 | 0 | 6 | 6 | |
| Grade I c | 0 | 0 | 3 | 3 | |
| Grade II d | 0 | 0 | 8 | 8 | |
| Grade III d | 0 | 0 | 1 | 1 | |
| No Discharge | 0 | 0 | 1 | 1 | |
| Minimal Discharge | 0 | 0 | 3 | 3 | |
| Wound healed & Healthy Scar | 89 | 89 | 0 | 0 | |
| Normal Healing | 0 | 0 | 75 | 75 | |
| Total | 100 | 100 | 100 | 100 | |

The follow-up 2 data compares outcomes across different grades and healing statuses between the Case Group and Control Group. In the Case Group, which likely includes patients under specific medical management or study, there were 11 patients with Grade I a, 8 with Grade II d, and 89 with Wound healed & Healthy Scar. Conversely, the Control Group showed different distributions, such as 3 patients with Grade I a, 6 with Grade I b, and 75 with Normal Healing.

**Table 8: Distribution of patients according to treatment on follow up 2.**

| Treatment (Follow up 2) | Case Group | | Control Group | | P-value |
|---|---|---|---|---|---|
| | No. of patients | Percentage | No. of patients | Percentage | |
| Secondary suturing done | 3 | 100 | 10 | 53 | 0.0001 |
| Absorptive dressing done | 0 | 0 | 1 | 5 | |

| | | | | | |
|---|---|---|---|---|---|
| Topical thrombophobe | 0 | 0 | 8 | 42 | |
| Total | 3 | 100 | 19 | 100 | |

The treatment comparison between the Case Group and Control Group at follow-up 2 shows different therapeutic interventions. In the Case Group, which likely consists of patients under specific medical management or study, treatments included secondary suturing done for 3 patients. In contrast, the Control Group had secondary suturing done for 10 patients, absorptive dressing done for 1 patient, and topical thrombophobe applied for 8 patients.

**Table 9: Distribution of patients according to inspection on follow up 3.**

| Follow up 3 | Case Group | | Control Group | | P-value |
|---|---|---|---|---|---|
| | No. of Patients | Percentage | No. of Patients | Percentage | |
| Grade I a | 0 | 0 | 19 | 19 | <0.0001 |
| Wound healed & Healthy Scar | 0 | 0 | 22 | 22 | |
| Normal Healing | 12 | 12 | 0 | 0 | |

The follow-up 3 data compares outcomes between the Case Group and Control Group, focusing on different grades and healing statuses. In the Case Group, there were no patients with Grade I a or Wound healed & Healthy Scar, but 12 patients exhibited Normal Healing. Conversely, in the Control Group, 19 patients had Grade I a, 22 had Wound healed & Healthy Scar, and none showed Normal Healing.

**Table 10: Distribution of patients according to treatment on follow up 3.**

| Treatment (After 21 days) | Case Group | | Control Group | | P-value |
|---|---|---|---|---|---|
| | No. of patients | Percentage | No. of patients | Percentage | |
| Secondary suturing done | 0 | 0 | 9 | 100 | 0.01 |

The treatment comparison after 21 days between the Case Group and Control Group shows that no patients in the Case Group underwent secondary suturing. In contrast, 9 patients in the Control Group received secondary suturing during this period.

**Table 11: Distribution of patients according to final outcome.**

| Outcome | Case Group | | Control Group | | P-value |
|---|---|---|---|---|---|
| | No. of Patients | Percentage | No. of Patients | Percentage | |
| SSI | 3 | 3 | 19 | 19 | 0.0002 |
| Normal Healing | 97 | 97 | 81 | 81 | |
| Total | 100 | 100 | 100 | 100 | |

The outcome comparison between the Case Group and Control Group shows that 3 patients in the Case Group experienced

Surgical Site Infection (SSI), while 97 patients had Normal Healing. In comparison, 19 patients in the Control Group had SSI, and 81 patients experienced Normal Healing.

## 4. DISCUSSION

In the Case Group, we observed the following age distribution: 32 patients were aged 17 to 40 years, 38 patients were aged 41 to 60 years, and 30 patients were over 60 years. Meanwhile, in the Control Group, there were 31 patients aged 17 to 40 years, 35 patients aged 41 to 60 years, and 34 patients over 60 years.

Harish R et al.[10] reported that in their cases group, 26 patients were under 40 years and 24 were over 40 years, whereas the control group had 28 patients under 40 years and 22 patients over 40 years. There was no significant age distribution difference between the groups, with mean ages of 40.94 ± 15.10 years for the cases and 39.54 ± 10.54 years for the controls.

Hoshino S et al.[11] noted that the average age was similar between the groups, with a mean age of 64.04 years in the control group and 64.02 years in the study group (p = 0.982), indicating no significant age difference.

Laas E et al.[12] included 92 patients in Group 1 and 98 patients in Group 2, with mean ages of 55.5 years (range 14 to 86 years) and 54.5 years (range 23 to 87 years), respectively, showing no statistically significant age difference (p = 0.6). The present study observed that the Case Group comprised 49 males and 51 females, whereas the Control Group had 46 males and 54 females.

Mody P et al.[13] found that in the triclosan-coated suture group, out of 100 subjects, 26 (52%) were males and 24 (48%) were females. In the conventional uncoated suture group, the distribution was 25 males (50%) and 25 females (50%). There was no significant gender distribution difference between the groups (p = 0.841). Varsha et al.[14] noted a higher SSI rate in males (7.4%) compared to females (5.1%). Conversely, Khan MA et al.[15] reported a higher SSI rate in females (27%) than in males (18%). Mody P et al.[13] found that out of 50 subjects in the triclosan-coated suture group, 8 (16%) had diabetes mellitus, compared to 9 (18%) in the conventional uncoated suture group. There was no significant difference in diabetic status between the groups (p = 0.790).

In our study, we observed the distribution of wound healing grades and normal healing in both the Case and Control Groups. In the Case Group, there were 2 patients with Grade I a, 1 patient with Grade II a, 2 patients with Grade III a, 3 patients with Grade IV b, and 1 patient with Grade V, with 85 patients showing normal healing. In contrast, the Control Group had 5 patients with Grade I a, 4 patients with Grade II a, 4 patients with Grade III a, 10 patients with Grade IV b, and 2 patients with Grade V, with 75 patients showing normal healing. These differences indicate varied responses and progressions in each group.

Additionally, in the Case Group, which likely consists of patients under specific medical management or study, there were 11 patients with Grade I a, 8 patients with Grade II d, and 89 patients with wounds healed and healthy scars. In the Control Group, there were 3 patients with Grade I a, 6 patients with Grade I b, and 75 patients with normal healing.

Another observation showed that in the Case Group, there were no patients with Grade I a or wounds healed and healthy scars, but 12 patients exhibited normal healing. Conversely, in the Control Group, 19 patients had Grade I a, 22 had wounds healed and healthy scars, and no patients exhibited normal healing. These distributions highlight the varied healing responses between the Case and Control Groups.

In our study, we observed the treatments administered in both the Case and Control Groups. In the Case Group, treatments included absorbent dressing for 2 patients, Culture and Sensitivity (C&S) testing for 3 patients, and topical thrombophobe application for 6 patients. Conversely, the Control Group received absorbent dressing for 12 patients, C&S testing for 23 patients, and topical thrombophobe application for 2 patients.

The current study observed that within the Case Group, 3 patients experienced Surgical Site Infection (SSI), while 97 patients underwent Normal Healing. In contrast, the Control Group had 19 patients with SSI and 81 patients with Normal Healing.

Mody P et al[13] reported that among 50 subjects in the triclosan-coated suture group, only 2 (4.0%) developed SSI, whereas in the Conventional Uncoated Suture group, 8 (16.0%) experienced SSI. This difference was statistically significant (p=0.04), indicating that Triclosan-Coated Suture material effectively reduces the incidence of SSIs compared to conventional sutures.

Galal et al[16] demonstrated that triclosan-coated polyglactin 910 sutures decreased SSI incidence from 15% to 7%, reinforcing the benefit of these sutures in surgical settings.

He P et al[17] conducted a study encompassing three research projects involving 2,689 patients, documenting the overall incidence of Surgical Site Infection (SSI). They reported an SSI rate of 1.9% (25/1,296) in the triclosan group and 2.5% (35/1,393) in the control group.

## 5. CONCLUSION

We found that in the Case Group there were 32 patients aged between 17 to 40 years, 38 patients aged between 41 to 60

years, and 30 patients aged over 60 years. Conversely, in the Control Group there were 31 patients aged 17 to 40 years, 35 patients aged 41 to 60 years, and 34 patients aged over 60 years. Here we also observed that in the treatment comparison after 21 days between the Case Group and Control Group shows that no patients in the Case Group underwent secondary suturing. In contrast, 9 patients in the Control Group received secondary suturing during this period. The present study shows that 3 patients in the Case Group experienced Surgical Site Infection (SSI), while 97 patients had Normal Healing. In comparison, 19 patients in the Control Group had SSI, and 81 patients experienced Normal Healing.

## REFERENCES

[1] NHSN.Surgical Site Infection Event. Accessed September 16, 2021 at: http://www.cdc.gov/nhsn/pdfs/pscmanual/9pscssicurrent.pdf

[2] Mangram AJ, Horan TC, Pearson ML, Silver LC, Jarvis WR. Guideline for prevention of surgical site infection, 1999. Am J Infect Control 1999;27(2):97–134

[3] National Nosocomial Infections Surveillance (NNIS) National Nosocomial Infections Surveillance (NNIS) System Report, Data SummaryfromJanuary1992-June 2001, issued August 2001. Am J Infect Control 2001;29(06):404–421.

[4] Hranjec T, Swenson BR, Sawyer RG. Surgical site infection prevention: how we do it. Surg Infect 2010;11:289–94.

[5] Barie PS. Surgical site infections: epidemiology and prevention. Surg Infect (Larchmt) 2002;3(Suppl 1):S9–S21.

[6] Shao J, Zhang H,Yin B,Li J, ZhuY, Zhang Y. Risk factors for surgical site infection following operative treatment of ankle fractures: A systematic review and meta-analysis. IntJSurg2018;56:124–132.

[7] Guo T, Chen B, Rao F, Wu P, Liu P, Liu Z, et al. Identifying the superior antibiotic prophylaxis strategy for breast surgery: A network meta-analysis. Medicine (Baltimore) 2019;98:e15405.

[8] Miyoshi N, Fujino S, Nishimura J, Suzuki Y, Ueda M, Uemura M, et al. Effectiveness of triclosan-coated sutures compared with uncoated sutures in preventing surgical site infection after abdominal wall closure in open/laparoscopic colorectal surgery. J Am Coll Surg 2022;234:1147-59.

[9] Rosenberger LH, Politano AD, Sawyer RG. The surgical care improvement project and prevention of post-operative infection, including surgical site infection. Surg Infect (Larchmt) 2011;12 (03):163–168.

[10] Harish R, Kazi F N, Sharma J V. Efficacy of Subcutaneous Closed Suction Drainin Reduction of Postoperative Surgical Site Infection. Surg J (NY) 2021;7:e 275–e280.

[11] Hoshino S, Yoshida Y, Tanimura S, Yamauchi Y. AStudy of the Efficacy of Antibacterial Sutures for Surgical Site Infection: A Retrospective Controlled Trial. Int Surg 2013; 98:129–132.

[12] Laas E, Poilroux C, Bezu C. Coutant C, Uzan S. Antibacterial-Coated Suture in Reducing Surgical Site Infection in Breast Surgery: A Prospective Study. International Journal of Breast Cancer2012;1-8.

[13] Mody P, Ali I, Shetty V, Jadhav D, Manerikar K, Dikshit V. A comparative study to test the effectiveness of triclosan coated polyglactin 910 in reduction of surgical site infection in clean wounds. Int Surg J 2019;6:1182-6.

[14] Shahane V, Bhawal S, Lele MU. Surgical site infections: A one year prospective study in a tertiary care center. Int J Health Sci. 2012;6(1):79.

[15] Khan MA, Ansari MN, Bano S. Postoperative wound infection. Indian J Surg. 1985; 48:383-6.

[16] Galal I, El-Hindawy K. Impact of using triclosan antibacterial sutures on incidence of surgical site infection. Am J Surg. 2011;202(2):133-8.

[17] He P, Liu Z, Chen H, Huang G, Mao W, Li A. The role of triclosan-coated suture in preventing surgical infection: A meta-analysis. Jt Dis Relat Surg 2023;34(1):42-49.