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SURGICAL SITE INFECTION IN OBG - PRE AND POST COVID -19 PANDEMIC A COMPARATIVE STUDY

Obstetrics & Gynaecology

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ABSTRACT

Introduction: Surgical site infection (SSI) accounts for major morbidity in post-operative patients. **Methods:** An observational study was carried out in a tertiary health centre in Kerala, India, where SSI Rates were analyzed for a period of 24 months prior and 24 months after January 2020 (1st case of COVID-19) based on patient records. **Results:** A drastic reduction in SSI rates was noted in post covid period in Gynaecological cases (2.44%, p=0.004). Significant reduction in SSI was also noted in Elective LSCS (0.70%, p=0.004) and Emergency LSCS cases (1.51%, p=0.039). **Conclusion:** The practice of wearing N-95 masks and frequent hand washing can be continued to reduce SSI rates in OBG wards.

KEYWORDS

Surgical site infection, SSI, COVID-19, Handwashing, N-95 mask

INTRODUCTION

Surgical site infection (SSI) accounts for major morbidity and increased duration of hospital stay in post-operative patients.[1,2] SSI is associated with significant financial burden on patients and decreases their quality of life following treatment.[3] Interventions in form of skin preparation, surgical hand rub, surgical attire and antibiotic prophylaxis are common infection control practices undertaken by hospitals.[4,5] It Is found that approximately 25 -33 % of all infections in hospital could be prevented if adequate precautions are taken.[6]

RATIONALE

A drastic reduction in SSI rates was observed in OBG department post COVID -19 pandemic. In addition to the regular infection control measures already practised, wearing of N-95 masks and frequent hand hygiene practices were strictly advocated in OBG wards.

MATERIALS AND METHODS

It was an observational study conducted in a tertiary hospital in Kerala. After finding the total number of Elective LSCS, Emergency LSCS and Gynaecology cases, SSI cases fulfilling the criteria were identified and their rates were calculated for comparison.

SSI Rates were analyzed for a period of 24 months prior and 24 months after January 2020 (1st case of COVID-19) based on patient records and by telephonic follow up one month after surgery.

LITERATURE SURVEY

SSI can be classified as Superficial Incisional SSI and Deep Incisional SSI.

Criteria For SSI[7]

Superficial Incisional SSI

Date of event occurs within 30 days after any operative procedure AND Involves only skin and subcutaneous tissue of the incision AND patient has at least one of the following:

a. Purulent drainage from the superficial incision.

b. Organism(s) identified from an aseptically-obtained specimen from the superficial incision or subcutaneous tissue by a culture or nonculture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing (ASC/AST)).

c. Superficial incision that is deliberately opened by a surgeon, physician or physician designee and culture or non-culture-based testing of the superficial incision or subcutaneous tissue is not performed AND
patient has at least one of the following signs or symptoms: localized pain or tenderness; localized swelling; erythema; or heat.

d. Diagnosis of a superficial incisional SSI by a physician or physician designee.

Deep Incisional SSI

Date of event occurs within 30 or 90 days after the operative procedure AND involves deep soft tissues of the incision (for example, fascial and muscle layers) AND patient has at least one of the following

a. Purulent drainage from the deep incision.

b. A deep incision that spontaneously dehisces, or is deliberately opened or aspirated by a surgeon
AND
organism(s) identified from the deep soft tissues of the incision by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment
AND
patient has at least one of the following signs or symptoms: fever (>38°C); localized pain or tenderness.

c. An abscess or other evidence of infection involving the deep incision that is detected on gross anatomical or histopathologic exam, or imaging test.

RESULTS

In the period (24 months) prior to COVID -19, SSI Rates in Elective LSCS, Emergency LSCS and Gynaecology cases were 1.87%,2.67% and 7.30% respectively. In the post COVID -19period, SSI Rates in Elective LSCS, Emergency LSCS and Gynaecology cases were 0.7%,1.51% and 2.44% respectively. There was statistically significant reduction in SSI in all the three categories of cases studied.

Table 1: Incidence Of SSI Prior To COVID -19 Pandemic

	Total Cases	SSI	SSI Rate (%)
Elective LSCS	647	12	1.27
Emergency LSCS	1087	29	2.67
Gynaecology CASES	1082	79	7.30

Table 2: Incidence Of SSI Post COVID-19 Pandemic

	Total Cases	SSI	SSI Rate (%)
Elective LSCS	285	2	0.7
Emergency LSCS	529	8	1.51
Gynaecology Cases	737	18	2.44

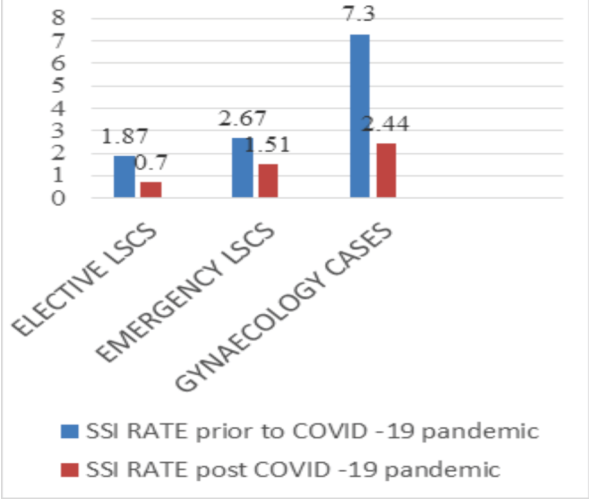

Chart 1: Comparison Of SSI Rates

Table 3: Comparison Of SSI Rates Pre And Post Covid -19 Pandemic

TYPE OF CASE	SSI RATE prior to COVID-19 pandemic (%)	SSI RATE post COVID - 19 pandemic (%)	p value
ELECTIVE LSCS	1.87	0.70	0.004
EMERGENCY LSCS	2.67	1.51	0.039
GYNAECOLOGY CASES	7.30	2.44	0.004

DISCUSSION

Statistically significant reduction in SSI rates was noted in post covid period in Elective LSCS, emergency LSCS as well as Gynaecological cases. The most significant reduction in SSI was noted in Gynaecological cases. Hand hygiene is the leading measure for preventing the spread of antimicrobial resistance and reducing healthcare-associated infection.[8,9] Masks can reduce outward transmission of infection by individuals which provides protection to others.[10]

CONCLUSION

The practice of wearing N-95 masks and frequent hand washing can be continued to reduce SSI rates in OBG wards in the future.

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