



## ANALISIS INFEKSI LUKA OPERASI POST SECTIO CAESARIA DI RSIA SELARAS

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### Abstrak

**Background:** The hospital is responsible for patient safety. The high rate of surgical site infection (SSI) in RSIA Selaras will affect the quality the healthcare services. From January to June 2021, the SSI had been increased in RSIA Selaras. With the intention of that, it needs the research to understand the probability factors of the SSI and the needs to improve the intervention of the infection control team to care the surgical site infection in the hospital. **Aims :** To acknowledge the risk factors which will affect the SSI in RSIA Selaras **Methods :** The research method in this study is descriptive using the retrospective approach. Collecting the secondary data from the medical, proceed and proceeding to analyze/ to research with the aim to get quantitative data. The secondary data is the SSI record from January to Mei 2021 in maternity and pediatrics RSIA Selaras. **Result :** The surgical site infection has been affected by the age factor, which is caused by the organ function particularly the skin changes. As well as the duration of the surgery also affects the SSI, this is caused by the surgical duration of more than 2 hours which will be risked microorganism contamination. Yet the surgical duration of less than 2 hours will not assure the good surgery. According to the criteria of the surgery wounds, its show that the differences characteristic of the surgery wound infections are affected by after surgery care, antibiotic prophylax usage, preoperative intraoperative and postoperative. **Conclusion:** the surgery site infection could be affected by several factors, particularly the age, surgical duration, and SSI critetria. The role of the infection control teams is necessary actively in the prevention and treatment of the SSI.

**Keywords:** *wound surgery infection; sectio caesaria; SSI risk factors*

## INTRODUCTION

Patient safety has been the issue of the healthcare service in the hospital. The indicator of the patient safety related to the common procedure performed is surgery site infection SSI. This is often occurred at postoperative. In worldwide cases, the SSI cases are 0,9% in the USA, 2,8% in Australia (Apsic, Infeksi, and Operasi 2018), and 6,1% in the countries where has the mid income to low income (“The National

Nosocomial Surveillance Infection (NNIS)” 1922). In Indonesia, SSI is one of the nosocomial infections which has been common and difficult to find causes. In the earlier research, SSI cases in Indonesia are 2-18% of all surgical procedures (Anton 2006).

Caesarean section is the surgical procedure in which babies are delivered thr2ough incision Mother’s abdomen and uterus. This surgery procedure shows the

increasing demand. The number of the cesarean section procedures in Indonesia whether in a state hospital or private have been increasing rapidly. Riskesdas result in 2013 showed that the labor by cesarean section was 9.8% from the total 49.603 from 2010 to 2013 (Sihombing, Saptarini, and Putri 2017). The increase in the number of sectio caesaria compare to increasing the SSI was directly proportional.

Selaras maternity and pediatrics hospital is focusing on obstetrics care. Selaras has been trying to upgrade healthcare quality, decreasing the number of nosocomial infection with surveillance by infections control team in the maternity ward. This examination will know the maximum number of infection nosocomial which are under control by the hospital. The number of nosocomial infections in January to June 2021 in the maternity ward are 5 for SSI. According to those number, the researcher intent to analyze postoperative wound infection of sectio cesaria in Selaras maternity and pediatrics Hospital in 2021.

Surgical site infection (SSI) is a postoperative wound infection which may occurs during examining patients in the hospital for 30 days after cesarean delivery (Mangram et al. 2000). Infection in the surgical ward is the major cause of morbidity and high cost of the healthcare for the patient as well as increasing the mortality rate in the hospital. SSI has 3 classifications such as Superficial Incisional Surgical Site Infection which is the skin or subcutaneous tissue is involved, Deep Incisional Surgical Site Infection which involves deep soft tissues such as fascia or muscle within the incision and Organ/Space Surgical Site Infection which involves any part of the anatomy other than the incision.

Superficial Incisional Surgical Site Infection has known as the purulent drainage from incision following at least one sign or symptom of clinical

infection: localized pain, edema, erythema, warmth. It is a notice with diagnostic laboratory testing (culture), isolated organisms from aseptically obtained fluid or tissue culture in incision. Whereas Organ/Space Surgical Site Infection will occur within 30 days postoperatively without the implant, occurs within one year if the implant is in place and infection appears to be directly related to surgical procedure. Those are must fulfill the following purulence from a drain that was placed via stab incision into the organ/space, isolated organisms from aseptically obtained fluid or tissue from the organ/space, abscess or other evidence of infection involving the deep incision is found during examination of incision, reoperation, or pathologic or radiologic exam.

There are several factors which affect the SSI, such as; environmental including the duration of the preoperative, antibiotic prophylaxis, and ventilation surgery ward. The length of the operation may spread the infection nosocomial risk; the duration of the patient care after seven days the surgery will occur the infection, and the high rate infection often occur on 7 to 13 days postoperation. Besides that, the aseptic technical which are *Scrubbing*, *Gowning* and *Gloving*. Whereas the activity for antiseptic surgery tools, surgery ward facilities, implant, personal protective equipments need to be taken into account and skin disinfectant to decrease the infection pathogen with natural or chemical mechanism and physical action (Darmadi 2008).

Other factors which will occur SSI, such as patient factor including age, nutrition and weight body, disease and medicine consumption of the patient itself. The rise of nosocomial infection is also affected by age. For instance, in 65 years old, the infection will occur three times often rather than young people. Moreover, the malnutrition patient will have many complications, and it will need more time to care after

the surgery. The patient who have comorbid such as diabetes mellitus, TBC, malnutrition, will have susceptible infections (Darmadi 2008).

The principle for prevention of SSI is to decrease the infection risk of the patient and prevention microorganism transmission from medical staff, environment, and the patient it-self. Those preventions could do on preoperative, intraoperative, and postoperative. Also, it could do with concern on the patient characteristic such as age, diabetes, tobacco use, obesity, and other infections from bacteria, decreased immunity, also the operation time duration (Darmadi 2008).

Antibiotic prophylaxis has been proved to decline SSI and it needs to do this action eventhough high-risk for particular infection II class and III class. Antibiotic

**METHOD**

The research method in this study is descriptive using the retrospective approach. Collecting the secondary data from the medical record and proceeding to analyze/to research with aim to get quantitative data. The secondary data is the SSI record from Januar to Mei 2021 in maternity and pediatrics RSIA Selaras. The data will be describe by age, duration of surgery and SSI criteria.

**Result**

Age	Number	Persentation
17-25 years	2	40%
26-35 years	2	40%
>35 yeras	1	20%
amount	5	100%

Table 1. SSI cases identified by the age of the patient

In Table 1, the SSI cases are identified by the age of the patient, which are divided into 3 groups such as 17-

prophylaxis usage is the main concern for the surgeon to control the spreading infection during surgery. The antibiotics must be used 2 hours before the surgery to have a therapy effect on the patient and it will not be given after 48 hours (Darmadi 2008).

Caesarean section is a fetal delivery through an open abdominal incision (laparotomy) and an incision in the uterus (hysterotomy) with the requirement fetus size at 500 gram (Wiknjosastro 2002). Every caesarean section has indications which are 1) Fetal indication such as the problem with placenta 2) maternal indication such as high blood pressure 3) maternal and fetal indication such dislocation, bleeding vaginal delivery 4) time indication as the problem with vaginal delivery (Gerhard Martius 1997). Caesarean section has several risks, such as surgery wound infection. Also anesthetic risk from mother could affect the fetus. 25 years old, 26-35 years old and >35 years old. In the group of 17-25 years old and 26-35 years old, there are two patients (40%) who have dominant cases rather than >35 years' old, which is only one patient (20%).

Duration of the surgery(hour)	Number	Persentation
<2 hour	5	100%
> 2 hour	0	0%
Amount	5	100%

Tabel 2. Identified by the Duration of the Surgery

Table 2 shows the SSI cases are identified by the duration of the surgery which divided into < 2 hours and > 2 hours. The surgery duration of less than 2 hours is the dominant case rather than more 2 hours. There is no case in the surgery duration more than 2 hours.

SSI Criteria	Patient 1	Patient 2	Pati
Superfisial	√	√	√
Profunda	-	-	-

Tabel 3. Identified by the Surgical Site Infection Criteria (Ministry of Health Regulation No.27 year 2017)

Table 3 shows the SSI criteria for 5 patients, in the Superficial Incisional, there are 3 patients and Deep Incisional/ profunda are 2 patients. A Superficial Incisional SSI is identified by the pus from the wound site and also the inflammation. A deep incisional SSI is identified by the pus from the wound site may reopen on its own (dehiscens).

## DISCUSSION

The age of the patient will be affected SSI case, it caused by the structural factor and function of the surgery so that the skin and the subcuticular suture is more susceptible. Skin is the first protection to prevent microorganisms from entering the body and multiplying through small cuts on the skin's surface. In the earlier research, in the age of 65 and above, SSI cases have risen because skin aging will cause the infection to worsen (Diez-sebastian, Herruzo-cabrera, and Lo 2004). Yet, Table 1 shows that the young age is the dominant case, because of the other factors such as comorbid disease, wound treatment, and self treatment after the surgery.

In the earlier research, the duration of the surgery is affected the SSI case, it causes the probability of microorganism contamination in the surgery ward which make the SSI case is worse (Zumaro 2009). Yet, in the surgery ward always related to the environment such as the pathogen bacteria and endogen bacteria contamination (Geroulous 2009). Yet in the updated data, the short procedure duration of the surgery is affected the SSI case because of the bad surgery procedure.

According to CDC who clarified in the earlier research in the RSCM about the surgery wound, A Superficial

SSI percentage cases is 47%, while a deep incisional is 42% and Organ/Space SSI is 11% (Bruce et al. 2001). Those data have correlated in the Table 3 which is the majority of the SSI case is a Superficial Incisional case. After the surgery care, The differences in the SSI criteria are affected by, antibiotic prophylax usage, preoperative intraoperative and postoperative. Moreover, the patient needs to concern about the care in treating the surgery wound, the healthcare services must inform the patient on how to treat the wound as well as the information about the symptom and signs of the possibilities of the wound infection.

## CONCLUSION

SSI is the issue for the patient who is affected by intrinsic factors and extrinsic factors. The age factor is one of the affected SSI cases, it causes by the skin aging condition. The duration of the surgery also affected the SSI, the long surgery duration will cause the probability of the microorganism contamination in the surgery ward, yet the short surgery duration does not guarantee the good surgery procedure. In the SSI criteria shows surgery wound is affected by intrinsic factors and extrinsic factors.

The rising number of the surgery infection in the caesarean section needs to be considered by infection preventive and control committee by improving the surveillance activity which focuses on treating nosocomial infection in the maternity ward. In addition, the role of nurses who concern about the quality care by doing the discharge planning of surgical wound treatment and the providing the quality of the nutrition for recovery of the wound.

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