

DEMOGRAPHIC AND CLINICAL-EPIDEMIOLOGICAL PROFILE OF PATIENTS WITH SURGICAL SITE INFECTION

*PERFIL SOCIODEMOGRÁFICO E CLÍNICO-EPIDEMIOLÓGICO DE PACIENTES
COM INFEÇÃO DE SÍTIO CIRÚRGICO*

*PERFIL SOCIODEMOGRÁFICO Y CLÍNICO-EPIDEMIOLÓGICO DE PACIENTES
CON INFECCIÓN DEL SITIO QUIRÚRGICO*

✉ Regina Kelly Guimarães Gomes Campos¹, ✉ Bruno de Freitas da Silva², ✉ Samia Jardelle Costa de Freitas Maniva³ e ✉ Isabel Cristina Oliveira de Moraes⁴

ABSTRACT

To evaluate the clinical, epidemiological and demographic profile of patients with surgical site infection. A documentary study with 55 sheets of notification of hospital-acquired infections of a referral hospital located in the city of Quixadá, in the months of January and February 2018. The demographic profile showed that the majority of people notified by IRAS was a woman; between 19 and 59 years of age; and was admitted to the accommodation; for less than three days. Clinical-epidemiological profile showed that most patients had performed Cesarean delivery; with length greater than or equal to 40 minutes; and the surgery was classified as clean; and the surgical site infection more common was the superficial. Practically, it is not conducting routine culture collection, according to the body of the suspect site infection. The clinical outcome of patients notified shows that almost all have evolved to improve/discharge. We need improvements in the work environment of the hospital services for professionals can play a quality and safety assistance.

Keywords: *Epidemiology; Infection of the Surgical Wound; Infection Control.*

RESUMO

Avaliar o perfil sociodemográfico e clínico-epidemiológico de pacientes com infecção de sítio cirúrgico. Realizou-se um estudo documental com 55 fichas de notificação de infecções hospitalares de um hospital de referência localizado no município de Quixadá, nos meses de janeiro e fevereiro de 2018. O perfil sociodemográfico mostrou que a maioria das pessoas notificadas por IRAS era mulher, entre 19 e 59 anos de idade, e esteve internada no alojamento conjunto por menos de três dias. O perfil clínico-epidemiológico evidenciou que a maioria dos pacientes tinha realizado parto cesáreo, com duração maior ou igual a 40 minutos; a cirurgia foi classificada como limpa e a infecção de sítio cirúrgico mais comum foi a superficial. Praticamente, não é rotina a realização de coleta de cultura, de acordo com o sítio corporal suspeito da infecção. O desfecho clínico do paciente notificado mostra que quase todos evoluíram para melhora/alta médica. É necessário melhorias no ambiente de trabalho dos serviços hospitalares para que os profissionais possam desempenhar uma assistência com qualidade e segurança.

Descritores: *Epidemiologia; Infecção da Ferida Cirúrgica; Controle de Infecção.*

RESUMEN

Evaluar el perfil sociodemográfico y clínico-epidemiológico de pacientes con infección del sitio quirúrgico. Se realizó un estudio documental con 55 fichas de notificación de infecciones hospitalarias de un hospital de referencia ubicado en el municipio de Quixadá, en enero y febrero de 2018. El perfil sociodemográfico mostró que la mayoría de las personas notificadas por HAI era mujer; entre 19 y 59 años de edad; y fue hospitalizado en alojamiento conjunto; por menos de tres días. El perfil clínico-epidemiológico mostró que la mayoría de las pacientes habían sido sometidas a cesárea; con duración mayor o igual a 40 minutos; y la cirugía fue clasificada como limpia; y la infección del sitio quirúrgico más frecuente fue la superficial. Prácticamente, no es rutinario realizar una colecta de cultivo, según el sitio del cuerpo sospechoso de infección. El resultado clínico del paciente notificado muestra que casi todos evolucionaron a mejoría/alta médica. Se necesitan mejoras en el ambiente de trabajo de los servicios hospitalarios para que los profesionales puedan brindar una atención de calidad y segura.

Descriptores: *Epidemiología; Infección de Herida Quirúrgica; Control de Infección.*

¹ Universidade Federal do Ceará, Fortaleza/CE - Brasil.

² Hospital Infantil Albert Sabin, Fortaleza/CE - Brasil.

³ Universidade Federal do Ceará, Fortaleza/CE - Brasil.

⁴ Centro Universitário Católica de Quixadá, Quixadá/CE - Brasil.

INTRODUCTION

Surgical site infections (SSIs) are infections related to surgical procedures, with or without implant placement, in inpatients and outpatients. They remain today as one of the main risks to patient safety in health services and are considered frequent adverse events that can result in physical, social or psychological damage to the individual, comprising 16% of infections found in hospitalized patients¹.

Regarding the risk factors related to SSI, there are four predisposing factors: direct contact, air, vehicle, and vector. Among these, transmission by direct contact is the one that stands out the most, and can be caused during actual physical contact in the performance of patient care activities, such as bathing, dressing changes, introduction of invasive devices, being present on the hands of the professionals themselves or on contaminated gloves².

SSIs remain nowadays one of the main risks to patient safety in health services and are considered frequent adverse events resulting from patient health care, which can result in physical, social or psychological damage to the individual, comprising 16% of infections found in hospitalized patients. It is estimated that SSI can be avoided in up to 60% of cases through the application of recommended guidance and prevention measures¹.

A study carried out at the Hospital das Clínicas of the Botucatu School of Medicine, located in the interior of the state of São Paulo, showed that of the 155 patients who underwent colon surgery, 11 were diagnosed with SSI during hospitalization and 15 after discharge, which is associated with longer postoperative hospitalization³. Another study carried out at the General Hospital of Fortaleza in the State of Ceará, which aimed to evaluate the incidence of SSI of the digestive system, showed that among the most relevant risk factors at work were the long period of hospitalization in the preoperative period, the duration of the procedure above the expected, senile age, the use of *penrose* drains and smoking⁴.

The prevention of these infections involves several segments, such as the management of quality and resources to ensure an adequate work structure, such as attention to hygiene, the training of health professionals and personnel with constant knowledge about the changes in infectious agents associated with advances in the medical care of increasingly vulnerable patients⁵.

Therefore, it can be seen that within the multidisciplinary team, the nurse has a very important role, especially in the systematization of nursing care, at different moments of the patient's stay in the units. This care begins with installation, handling, and prevention and control of complications, through actions to control infection and care with equipment⁶.

In addition, the existence of a Hospital Infection Control Committee (HICC) within a hospital unit is of fundamental importance, as it brings with it care for the prevention and control of infections, both for the clinical staff and for the client. Nurses working in this sector are responsible for paying attention to the direct actions of other health professionals to the patient. Its actions are dependent and interrelated, routinely supervising, in all sectors, the development of the work of health professionals; drafting

and updating standard operating procedures; carrying out epidemiological surveillance; among other functions⁷.

The study is justified by the complexity and severity of SSIs, demonstrated by the high rates of SSI in Brazil, by the prolongation of the patient's hospitalization, by the additional costs to the treatment and, often, by the return of the patient to the service, after discharge, for clinical treatment of SSI related to procedures performed in the hospital service.

It is hoped that the results of this study will support and improve the qualification of professionals who provide care to patients with SSI, allowing their rapid reintegration into the social environment; and also help the planning of actions by health institutions, in the perspective of continuous innovations, through the adoption of prevention and control measures specific to patients with SSI. improving the quality of life of the patient and his/her family, and reducing the presence of postoperative complications.

Thus, the study aims to evaluate the sociodemographic and clinical-epidemiological profile of patients with surgical site infection.

METHODS

This is a documentary research carried out in a reference hospital, located in the municipality of Quixadá, in the State of Ceará.

The study population was composed of the CCIH notification forms, and the sample consisted of the records of patients who were hospitalized in 2016 and 2017. As an inclusion criterion, it was established that they were 18 years of age or older and had been admitted to the service's rooming-in or surgical clinic. Notification forms that presented more than 50% of incomplete information were excluded, totaling 55 documents.

Data were collected in January and February 2018, from Monday to Friday, in the afternoon, through daily visits to the institution's CCIH. A questionnaire-type instrument was used, created based on the service's HICC notification form and on guides and manuals on healthcare-associated infections in the Ministry of Health¹, consisting of the following variables: gender, age group, unit/sector, length of hospital stays, type of surgical procedure, duration of surgery, type of SSI, SSI culture collection, clinical outcome of the SSI patient.

The data were tabulated by the researcher in a spreadsheet built in Excel 2010®, based on the questionnaire variables. Then, they were submitted to a statistical analysis by the EPI INFO 7.0 program, and the percentage frequencies were generated, which were later presented in tables, interpreted and discussed with the literature on the subject.

The research was designed in accordance with the ethical aspects recommended in Resolution No. 466/12 of the National Health Council, which regulates research with human beings (BRASIL, 2012), and was approved under protocol No. 2,490,326.

RESULTADOS

A total of 55 notification forms of patients with surgical site infection were analyzed. The sociodemographic profile showed that most of them were women (51;

92.7%), aged between 19 and 59 years (51; 92.7%), and had been hospitalized in rooming-in (39; 70.9%) for less than three days (39; 70.9) (Table 1).

Table 1 - Sociodemographic profile of patients with surgical site infection in a referral hospital. Quixadá-Ceará, 2018.

Variables	n=55	%
Gender		
Male	04	7,3
Female	51	92,7
Age group		
> = 18 years	03	5,5
19-59 years old	51	92,7
Other	01	1,8
Unit/Sector		
Rooming-in	39	71,0
Surgical clinic	16	29,0
Length of hospital stay		
≤3 days	39	70,9
4 to 6 days	05	9,1
≥7 days	11	20,0

Source: Survey data (2018).

When evaluating the clinical-epidemiological profile, it was observed that most of the patients had undergone cesarean section (38; 69.0%), lasting more than or equal to 40 minutes (47; 85.4%) and the surgery was classified as clean (37; 67.3%) (Table 2).

Table 2 - Clinical and epidemiological profile of patients with surgical site infection in a referral hospital. Quixadá-Ceará, 2018.

Variables	n=55	%
Type of surgical procedure		
Appendectomy	03	5,5
Cholecystectomy	04	7,3
Histerectomia	07	12,7
Parto cesáreo	38	69,0
Parto vaginal	01	1,8
Other	02	3,7
Surgery time		
<20 min	01	1,8
20 to 39 min	02	3,7
>=40 min	47	85,4
Other	05	9,1
Type of surgical site infection		
Superficial	45	81,8
Deep	01	1,8
Other	09	16,4

Source: Survey data (2018).

The microbiological characterization of SSIs showed that the culture of secretion from the infected surgical site is not routine of the service (44; 80.0%) (Table 3).

Table 3 - Culture of patients with surgical site infection in a referral hospital. Quixadá-Ceará, 2018.

Harvested Culture	n=55	%
Yes	01	1,8
No	44	80,0
Other	10	18,2

Source: Survey data (2018).

The clinical outcome of the patient notified by SSI showed that almost all of them progressed to medical improvement/discharge (38; 69.0%) (Table 4).

Table 4 - Clinical outcome of patients with surgical site infection in a referral hospital. Quixadá-Ceará, 2018.

Clinical outcome of the patient	n=55	%
Improvement/Discharge	38	69,0
Transfer	03	5,5
Other	14	25,5

Source: Survey data (2018).

DISCUSSION

The analysis of the sociodemographic profile shows that the highest percentage of women and rooming-in is related to the hospital being a reference in obstetrics, receiving several women daily from the local municipality and neighboring cities for cesarean or vaginal delivery. In addition, the relevant age presented is similar to a study carried out in an outpatient clinic located in a general hospital in the State of Sergipe, which aimed to identify the incidence of SSI in the postoperative period of 196 patients undergoing elective orthopedic surgeries, with a higher prevalence of people between 18 and 59 years of age⁸.

On the other hand, the length of hospital stay differs from the data of a study carried out in a university hospital in a Brazilian capital, with the main objective of determining the incidence of SSI and analyzing the applicability of the Surgical Risk Index (CKD) in the prediction of SSI in puerperal women undergoing cesarean section, which obtained a longer hospital stay of approximately 4.7 days⁹. Therefore, regardless of the type of surgery, early discharge is important, given the patient's hemodynamic stability, avoiding the risk of infection due to the diversity of microbial flora that inhabits many hospital institutions¹⁰.

The clinical-epidemiological profile is similar to a study that, when evaluating the profile of patients with obstetric infections admitted to the ICU of a public university hospital in the interior of Paraná, had cesarean section as the main surgical procedure performed before the onset of SSI (85.7%)¹¹.

The surgery time can vary depending on the type of procedure to be performed and its degree of complexity. In the study, this time was greater than or equal to 40 minutes, as expected for minor surgeries, such as those performed at the hospital studied and in cesarean deliveries¹⁰. It is known that the duration of surgery can be considered a risk factor for the emergence of an infectious process, as shown by the data of a study

carried out at the General Hospital of Fortaleza in the State of Ceará, which aimed to evaluate the incidence of SSI of the digestive system, showing that of the 196 patients investigated, 26 developed the infectious process, with the most relevant risk factors being the long period of hospitalization in the preoperative period, the duration of the procedure longer than expected, senile age, the use of *penrose* drains, and smoking⁴.

The classification of SSI as clean is in line with the research by Santos *et al.* (2017), which aimed to identify the incidence of SSI in the postoperative period of patients undergoing elective orthopedic surgeries, showing that of the 140 surgical procedures evaluated, almost all had the surgery classified as clean (129; 92.10%)⁸.

The most common SSI was superficial. According to data in the literature, superficial SSI occurs in the first 30 days after the surgical procedure, involving the skin and subcutaneous tissue¹, as shown in a study performed at a tertiary university hospital in a Brazilian capital, in which 57.1% of infected surgical cases were classified as superficial SSI⁹.

It is known that infections by multidrug-resistant bacteria represent a relevant public health problem, which affects several countries and reflects a risk to the health and safety of patients, which can directly influence the prognosis of the individual. When evaluating the microbiological characterization of SSIs, it was observed that no culture is collected from the infected surgical site, and it is not possible to identify the specific causative agent of the infection, unlike the results observed in a study carried out in a tertiary hospital in the north of the State of Minas Gerais, with the objective of determining the epidemiological profile of nosocomial infections caused by multidrug-resistant bacteria. evidencing the prevalence of *Klebsiella pneumoniae*, *Escherichia coli*, *Acinetobacter baumannii*, *Staphylococcus aureus* and *Pseudomonas aeruginosa*, allowing the treatment of the infection with specific antimicrobials¹².

The clinical outcome of the patient notified by SSI shows that almost all of them progressed to medical improvement/discharge, similar to a study that, when conducting a search in 76 medical records of patients admitted to a surgical care unit and which aimed to know the main causative agents of infections in the hospital environment, identified that 75 (98.7%) were discharged/improved¹³.

Finally, in the course of the pandemic, the Unified Health System revealed its potential and its challenges in the face of a lack of resources. This problem is not new. However, the daily struggle of health professionals to care for and save lives has not exhausted the existing possibilities and their human resources, which continue to face problems for activities and without effective support from the Brazilian State, and often from the management of the health services themselves. Therefore, the present and the future require actions that enable structural transformations in the form of health management in the country, ensuring the necessary resources for continuous and quality care¹⁴.

The limitation of the study was the lack of detailed information in the forms analyzed.

CONCLUSION

The research was of paramount importance and relevance for hospital health institutions, because through it, managers will be able to work on the unfavorable factors identified during the research and have a different look at the emergence of SSI and its main causes.

It is expected that the multidisciplinary team, especially the nurse, will be sensitized, as they have a preponderant role in the appearance of these problems, being able to act in the prevention of modifiable risk factors, such as, for example, improving and controlling the cleaning and disinfection of equipment and the patient's hospital environment, performing and encouraging hand hygiene correctly, reducing the patient's preoperative time in the institution, as well as the bacterial colonization of the patient's skin, among others.

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