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Original Research Paper

General Surgery

A STUDY ON SURGICAL SITE INFECTIONS (SSI) AND ASSOCIATED FACTORS IN A GOVERNMENT GENERAL HOSPITAL VIZIANAGARAM, ANDHRAPRADESH

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ABSTRACT **Background:** Surgical site infections (SSI) frequently cause morbidity and mortality among inpatients of hospitals. Several factors affect the development of SSI. **Objectives:** To study the identify the risk factors for Surgical Site Infections and most common Organisms associated with SSI in the surgical wards of Vizianagaram district hospital. **Methods:** this study was done at government district hospital Vizianagaram between January 2019 and December 2020 .50 cases of post operative wound infection during the study period were selected by purposive sampling and determinants associated with SSI. **Result:** In this study most common age group involved in SSI 50 to 70 years. Most common comorbid condition involved in SSI Diabetes. Staphylococcus aureus was the predominant organism isolated from the surgical sites followed by E Coli, Pseudomonas and Klebsiella. Among culture positive SSI cases Linezolid was most sensitive antibiotic against gram positive organisms and Amikacin was most sensitive antibiotic against gram negative organisms. **Conclusion:** SSI is a common complication in surgical wards and responsible for increased morbidity and financial burden to patient. Staphylococcus aureus was the most common organism associated with SSI. Since these risk factors and determinants of SSI are largely preventable, it requires a team effort rather than just the surgeon which can prevent its occurrence.

KEYWORDS : SSI, Diabetic, Staphylococcus aureus

INTRODUCTION:

Surgical site infections (SSI) frequently cause morbidity and mortality among inpatients of hospitals. They account for a considerable proportion of nosocomial infections among hospital inpatients. For surgical patients, SSIs are the most common nosocomial infection and they have been shown to be the leading cause of operation-related adverse events.[1,2] Several studies have demonstrated an increased length of hospitalization and the associated financial implications for patients with SSI compared with non infected patients having similar surgical procedures.[3,4] This clinical study will discuss regarding pathogenesis, risk factors associated with SSI with focus on proper management ,which will be a help for clinical practice of surgery.

MATERIAL AND METHODOLOGY:

This study was done at government district hospital Vizianagaram between January 2019 and December 2020 .50 cases of post operative wound infection during the study period were selected by purposive sampling and determinants associated with SSI namely commonest organism involved ,most sensitive antibiotic, age of patient, diabetes, obesity, type of surgery and elective cases were studies.

RESULTS:

During study period 50 cases of post operative wound infections cases observed. The age of study subjects ranged between 18 years to 70 years. Most common SSI case age group between 50 to 70 years. Out of 50 cases 32 cases age group in between 50 to 70 years reaming 18 cases in between 18 to 50 years. Anemia, hypertension and diabetes mellitus were the three comorbid conditions studied. Among the 50 cases of SSI 35 (70%) patients having anemia 42(84%) patients had diabetes and 20(40%) patients had hypertension. Once a SSI developed the surgeons order for culture and sensitivity tests and the antibiotics are changed accordingly. Among the 50 SSIs, 50 showed growth of colonies. Staphylococcus aureus was the predominant organism isolated from the surgical sites followed by E Coli ,Pseudomonas and Klebsiella. Among culture positive SSI cases Linezolid was most sensitive antibiotic against gram positive organisms and Amikacin was most sensitive antibiotic against gram negative organisms.

Table 1: Organisms Associated With SSI

Organism	Frequency at SSI No.	Percentage
Staph. Aureus	20	40%
E.Coli	17	34%
Pseudomonas	7	3.5%
Klb. Pneumonia	4	0.8%
Proteus	2	0.4%

DISCUSSION:

Post-operative wound infection still remains one of the most important causes of morbidity and is the most common nosocomial infection in surgically treated patients[2]. The present study was carried out among 50 postoperative SSI cases in the government district hospital at Vizianagaram, Andhrapradesh state. The rate of SSI increases with the increase in age. In the current study a higher proportion of SSI was found among the subjects older than 50 years. This is comparable to other studies[5,6]. This is due to poor immune response, existing co morbidities in old patients and reduced compliance with treatment.[5] Co morbid conditions like anemia, diabetes and hypertension were the significant risk factors for SSI. Diabetes remained significant predictor in multivariate analysis. National Academy of Science also reported higher rate of infection in patients with Diabetes mellitus which is similar to our study.[7]

Staphylococcus aureus was the predominant organism isolated from the surgical sites followed by E Coli and Pseudomonas in the present study. Klebsiella, and proteus were the other organisms isolated from SSIs. Lilani *et al.*, and Mahesh *et al.*, also found pre-ponderance of Staphylococcus aureus and Pseudomonas in SSIs in their studies.[8,9] Many studies have reported Staphylococcus aureus as the commonest isolate from the postoperative wound infection.[10] Other organisms have shown varied preponderance in different studies. Staphylococcus aureus forms the bulk of the normal flora of skin and nails.Hence; it is the commonest organism found in most of the SSIs. The high incidence of gram-negative organisms in the postoperative wound infections can be attributed to be acquired from patient's normal endogenous micro flora.[11]

CONCLUSION:

SSI is a common complication in surgical wards and

responsible for increased morbidity and financial burden to patient. This can be prevented by proper preoperative ,intraoperative and post operative management of pateints. Age, Co morbid conditions like Anemia, Hypertension and Diabetes mellitus, pre operative waiting and prophylactic antibiotic usage were risk factors for SSI. Staphylococcus aureus was the most common organism associated with SSI. Since these risk factors and determinants of SSI are largely preventable, it requires a team effort rather than just the surgeon which can pevent its occurrence.

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