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## Incidence and Etiologic of surgical site Infections among surgery patient in India: A literature review

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### ABSTRACT

*SSI is a major cause of Morbidity, longer postoperative hospitalization, complication, and patients. Despite Modernization, SSI remains a major cause of patients' dissatisfaction we can learn from existing Literature. We have lots of information which could be summarized all over, Internal (caused by patients body) external (caused by an outside source) has been discussed the variance in protocols and practice has been observed. Use and choice of antibiotics and multivitamins are discussed. How to detected and control Community Acquired*

**Keywords:** Community-Acquired, Hospital Acquired SSI, Surgical Site Infection

### 1. MATERIALS AND METHODS

Research Papers, review article, conference Papers and Lectures, Symposium article and lectures, popular lectures, workshop discussions have been taken into consideration Total 78 Literature have scrutinized finally 18 have selected for this review.

### 2. INTRODUCTION

The Symptoms of Surgical site infection typically appear within 3 to 7 days .in some cases, it may be within 3 to 4 weeks after the surgery

Delayed healing, fever, pain tenderness swelling and trembling are the general SSI. it may be other sign or Symptoms for specific SSI. Surgical site infection if varies from hospital to hospital ,state to state and country to country .it also varies time to time depending upon weather condition in India and US also depend on type of surgery, pre existing diseases .

Surgical site infections rates are higher than those reported this review is an important towards the knowledge of SSI on real ground. However very few literature exist about SSI in India. our try our level best to analysis.

### 3. DISCUSSIONS

SSIS rates were lower when the surgery was elective clean, the patient had lower ASA. Also when suitable antimicrobial prophylaxis was administrated . up to 60% of SSI have been estimated to be preventable by using evidence based guidelines. finally there is lots of room for improvement all professionals involved in patients care needed to be careful, concious and sensitive and must follow protocol strictly.

Despite of all different reports one thing is very clear, controlling SSIs are possible . While relating SSI with age factor, a physician should take, other age related factor and parameters. By recognising all reports, several potential weaknesses are there most common is there is no hybrid parameters a Physician found to consider hybrid parameters. majority of SSIs were resistant to multiple antibiotics.

Who published global guidelines on prevention of SSI with new edition in December 2018. they include 29 recommendations on 23 topics .based on 28 systematic reviews of evidence, prevention of SSI in the pre, intra and post operation period, recommendation have published .also who surgical safety checklist identified a wide range of measures aimed of keeping patients safe during surgery.

According to who report 11 % of patients of surgery are infected in practice, in low and middle income countries on other hand , incidence Of SSI in India shows higher rate ranging from 23% to 38% compare to global estimates 0.5% to 15%

This leads investigator to analysis, how to prevent such a huge rate of SSIs. Real India is rural India but small data is available from rural area. SSIs result in heavy financial burden on patients and healthcare system and it also damages physician's social prestige. To find out the patient at risk of SSI ,A Physician should take all factor into account .

For the last few years, hospitals have taken the hospital-acquired infection seriously. small and medium range hospitals established infection tracking and surveillance system in place.

### **(1) Body mass Index**

Infections that Occur in wounded created by invasive surgical procedure are consider as SSIs .obesity (BMI $\geq$  30) is treated as a major factor in modern days, as responsible for SSIs. Risk of SSI increased with BMI. some of the Studies show probability of SSIs increases almost 50% As BMI increases . on other hand one research paper reports there is no relation between SSIs and BMI .obesity increase adverse effect on health heart disease , type-2 diabetes ,blood pressure etc. these all are also responsible for increase probability of SSIs. WHO reports that incidence of obesity is increasing worldwide. so surgeons can not neglect BMI and SSI relations

As we know, due to aging of the immune system, elderly patients in general are susceptible to infections if there is more chance of obesity at that age . underweight is also responsible for SSI in low income country like India , Due to starvation protein deficiency and other nutrition deficiency causes immunodulatory effects these are the factor responsible for SSI.

### **(2) Emergency Operation:**

Almost 28% operations are major emergency operation. most of these patients are at high risk at SSI. one of the reason is preoperative preparation and "dirty" operations .sources of infection may be primary or secondary or its combination most of the emergency surgeries were carried out beyond normal duty working hour\*[-] preoperative oral antibiotics are not possible because of emergency operation .this also a reason of high risk SSI.

### **(3) Steroid use and immunosuppressant**

Use of steroids for mild viral infection or cold in rural and suburban part of india is common .there are unquoted doctors, without knowing side effects, have treated. disease like cancer is diagnosed at the time of surgery so it is advisable to take fitness certificate from a physical

### **(4) Type of surgery**

Duration of surgery is strongly related with types of surgery as organ transplant , cholecystectomy vascular surgery , colon surgery ,gynecology surgery ,abdominal or vaginal hysterectomy, coronary artery bypass graft are high risk SSIs surgeries.

## **3.1 Important points**

1. Surgical care includes prevention Of SSI
2. Extra care for the patient who admitted of hospital long before surgery
3. avoid inappropriate use of broad spectrum antibiotic or prolonged course of prophylactics puts all patients at high risk.
4. All protocol must be follow and standardize administration process to occur with commonly performed activity with one hour prior to inclusion .
  - a. 5 make sure timely delivery of preoperative antibiotics to patient.
5. systematic chart(proper or electronic)must be well maintain
6. Educate the supporting staff for administration of standard protocol
7. improve screening for allergies to beta lactam antibiotics to eliminate false positives.
8. consider weight based antibiotic dosing
9. only when hair removal is necessary for surgical procedure , use clipper right before surgery
- 10.educated patient with techniques and material for the hair removal at home .
  - a. 12 Especially for heart surgery patient do not hair removal for ECG.

## **4. SUGGESTIONS**

1. Patients having diabetes, cigarette smoking, obesity and coincident remote site infection must have extra care Hospital or doctor should additional protocol for such patients
2. Advice patient for preoperative bathing
3. Each Hospital, institute or Surgeon has its own Method according to environment , socio-economical condition of patients and institute. It is Up to hospital management to review time to time .
4. In India there are so many institute, colleges, universities Department have their microbiology department Allow them to analyse conditions on real ground.
5. Data Collection and analysis may be multi-disciplinary including non-medical discipline.
6. Because of most prophylactic antibiotics Exhibit. time -dependent bacterial action . Proper timing of antibiotics is upmost important . Paramedical staff must be sensitive and punctual about this.
7. Don't use , chlorhexidine gluconate impregnated cloths for the purpose of reducing SSI because of low quality.
8. Provide instruction to patient on how best to maintain personal hygiene.

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