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**OPERATIVE SPOT CONTAMINATIONS IN SPOTLESS AND  
SPOTLESS IMPURE SURGICAL TREATMENTS AND ITS  
CONNECTION WITH III VS. VI DOSAGES OF  
PREVENTATIVE ANTIMICROBIAL ASSUMED COLUMN  
EFFECTIVELY**

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**Abstract:**

**Objective:** find more effective regimen for giving prophylactic antibiotics postoperatively in order to limit the surgical site infection rate to minimum.

**Methodology:** the study was carried out in general surgical unit of Jinnah hospital Lahore over a period of six months using a sample size of 60 patients operated for clean and clean contaminated surgeries.30 patients were given 3 doses of cephalosporin while 30 were given 6 doses of the same antibiotic.consent was taken prior to evaluation

The patients were monitored for development of any infectious signs and symptoms at the site of surgery during their stay in the hospital via routine post op rounds.

**Results:** there was no difference between the infectious rate of both doses given post operatively if any.chi square test was applied and it showed insignificant association between doses and development of infection.

**Conclusion:**the number of dose does not effect the development of surgical site infection if any in post operative patients.

**Key words:** Surgical site infections, cephalosporins.

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## INTRODUCTION:

Globally it is the third most commonly reported health care associated infection and accounts for 14-16% of all nosocomial infections among hospital inpatients.<sup>2</sup> In Spain, the prevalence of SSI is estimated at 5-10%. Mortality attributable to SSI is 0.6% per year and that associated with SSI is 1.9%. In the USA, SSI lengthens the hospital stay by an average of 7.3 days with an additional cost of \$3200 per day<sup>3</sup>. A study in Pakistan confirmed that 13% of patients who underwent clean and clean contaminated surgery had SSIs.<sup>4</sup> Most important risk factors for the development of SSIs include the type of the surgery offered followed by post op care.<sup>3</sup> Preventing surgical site infection (SSI) through antimicrobial prophylaxis is important in defying the risk factors leading to causation of SSIs. According to the Centers for Disease Control and Prevention (CDC) National Nosocomial Infection Survey (NNIS) definition, a SSI is confirmed if one out of the following four criteria is fulfilled: (1) purulent discharge from surgical site; (2) a positive culture result from wound swab; (3) local symptoms (4) clinical suspicion made by a surgeon or physician.<sup>5</sup> However, the judicious use of prophylactic antibiotics can reduce the incidence of such health care associated infections. A common therapeutic class used for prophylaxis in patients suspected of developing SSI is third generation cephalosporin administered usually by the intravenous route<sup>6</sup> within one hour prior to surgery. Adequate build up tissue concentrations of the antibiotic should be present at the time of the incision and throughout the procedure. This entails

administration prior to incision. Further evidence shows that low tissue concentration of antibiotics at the time of wound closure is associated with higher SSI rates. Though SSIs risk varies by procedure offered and factors governing patient's immunity and resilience to infections but in this study an effort to optimize the dose of antibiotic administered prophylactically for prevention of such infections through assessing the incidence of surgical site infection in two groups had been done to minimize its incidence. A surgical site infection (SSI) is an infection that develops as a direct result of an operative procedure being performed on a patient. These infections are associated with increased morbidity and mortality, increased length of stay and higher healthcare costs, lead to a failure in wound healing, with greater likelihood of admission to intensive care unit (ICU), thereby accounting for one third of the post op mortality cases.<sup>1</sup>

## METHODOLOGY:

Research was carried out in general surgical ward of Jinnah Hospital Lahore after taking permission from the review board. It was a cross sectional study that included 60 consecutive general surgical patients. 30 were given 3 doses of antibiotic cefotaxime (cephalosporin), 30 were given 6 doses keeping all other variables the same. The study was expanded over a period of 6 months with exclusion of diabetics and immunosuppressed. Sample size was calculated using a WHO sample size calculator. Signs and symptoms of development of infection at the surgical site were noted (if any) during routine post-operative rounds. Data was added and analysed using SPSS version 19.

## RESULTS:

Number of doses of antibiotics used	Patients who developed infection	Healthy patients
3 doses of antibiotic	5	25
6 doses of antibiotic	4	26

In a total sample of 60 consecutive consenting patients out of 30 who were given 3 doses of ceftriaxone antibiotic only 5 developed surgical site infection, 16.7% whereas out of 30 those who were given 6 doses 4 developed surgical site infections, 13.3%. Chi square test when applied gives no significant association between the number of doses and development of infection  $p < 0.001$ .

## DISCUSSION:

In a total sample of 60 consecutive consenting patients out of 30 who were given 3 doses of ceftriaxone antibiotic only 5 developed surgical site infection, 16.7% whereas out of 30 those who were given 6 doses 4 developed surgical site infections, 13.3%. Chi square test when applied gives

no significant association between the number of doses and development of infection  $p < 0.001$ . Careful selected antibiotics given prophylactically can save a patient from detrimental effects of sepsis and later septic shock resulting in death.<sup>(25,26)</sup> A prophylactic dose given reduces the number of bacteria present at the site of surgery.<sup>(27)</sup> Rapidly developing resistance

against the microorganisms commonly associated with surgical site infections renders need for a very close selection of antibiotic cover and its dose given and the time elapsed between the dose also serves a very valid purpose in its prevention(28).For antibiotics as fluoroquinolones and vancomycin given within 1 to 2 hours pre operatively is adequately enough.(23,24).general surgeries such as colorectal surgery pose a greater risk because of extensivity of bacteriodes and indwelling organisms(30).A review of 2000 patients in Cochrane did not show any different results in prevention of surgical site infection when given different doses of antibiotics intravenously.(29,25)

#### **Conflict of interest:**

There is no conflict of interest in this study.no funding of any kind was done.

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