AN EXPERIMENTAL STUDY COMPARING PREOPERATIVE INTRA INCISIONAL ANTIBIOTIC INFILTRATION AND PROPHYLACTIC INTRAVENOUS ANTIBIOTIC ADMINISTRATION FOR REDUCING SURGICAL SITE INFECTION IN LAPAROTOMY SURGERIES

ABSTRACT

BACKGROUND AND OBJECTIVES:

The goal of surgical prophylaxis is to prevent wound infection and hence complication. Failure to maintain adequate serum and tissue levels throughout the surgical procedure increases the likelihood of the infection. Polk and Lopez-Mayor, have emphasized that wounds levels, not blood or serum levels, appear to determine the efficacy of agents for prophylaxis of operative wound infection. Intraincisional infiltration of the antibiotic of choice enables to maintain adequate minimum inhibitory concentration of the antibiotic at the wound site.

METHODOLOGY:

Patients undergoing laparotomy surgeries either in elective or emergency setting are being classified into two groups, one receiving preoperative intraincisional ceftriaxone infiltration along with intravenous ceftriaxone administration and the other receiving intravenous ceftriaxone alone as prophylaxis. The wound are classified into clean contaminated, contaminated and dirty and the outcome of both groups are analyzed in terms of superficial, deep and organ/space infection and complication. The drug concentration at wound site and serum are measured simultaneously and documented.

RESULTS:

Among the 100 patients, 35 of them were cases for whom infiltration was done and 65 of them were controls. Postoperative infection was present in 22% of cases (8 cases) and 49.23% of controls (32 patients). 12% of infection was seen in elective surgery and 87.5% of infection following emergency surgery. Organ space SSI contributes to 72.42 % of complication and deep SSI to 54.54% and superficial SSI 29.41% respectively. Presence of contaminants influenced the occurrence of infection and complication significantly. The most important contaminants are pus, fecal matter, gangrenous bowel and toxic fluid. Among the microorganisms that colonise the postoperative infection, staphylococcus accounts for the majority of cases(50%), followed by E.coli (31.57%), followed by Klebsiella (15.78%). The amount of drug present in incisional drain fluid at the end of 24 hours was observed to be well above the MIC of most of bacteria causing SSI in those received infiltration while in controls, no drug was present at the incisional site by the end of 24 hours.

CONCLUSION:

In our study there was significant reduction in incidence of SSI in the group, which received both Intra incisional and intravenous ceftriaxone preoperatively than the other group which received only intravenous ceftriaxone. Preoperative intra incisional antibiotics significantly reduces the rate of SSI because of the higher concentration achieved at the incision site.