



ROLE OF PROPHYLACTIC ANTIBIOTICS IN PREVENTING SURGICAL SITE INFECTION

Auday Qaid Khalaf Altememy*

Article Received on
26 Jan. 2019,

Revised on 15 Feb. 2019,
Accepted on 08 March 2019,

DOI: 10.20959/wjpps20194-13426

*Corresponding Author

Auday Qaid Khalaf
Altememy

ABSTRACT

Background: Surgical site infections (SSIs) account for 14-16% of the estimated 2 million nosocomial infections affecting hospitalized patients in the United States. Internationally, the frequency of SSI is difficult to monitor because criteria for diagnosis might not be standardized. A survey sponsored by the World Health Organization demonstrated a prevalence of nosocomial infections varying from 3-21%, with wound infections accounting for 5-34% of the total. Surgical wound infections increase health care costs by about 1.5

billion /year, prolonged hospitalization stay and increased morbidity/ mortality. The goals of prophylactic administration of antibiotics to surgical patients are to Reduce the incidence of surgical site infection and then it's costly treatment, Minimize the effect of antibiotics on the patient's normal bacterial flora by avoiding long term use of antibiotics, Minimize adverse effects of long term use of antibiotics including mainly the emergency of antibiotic resistance and Cause minimal change to the patients' host defenses

Aim of the Study

To evaluate the role of prophylactic antibiotics in preventing surgical site infection.

PATIENTS AND METHOD

This is a prospective study of 580 patients underwent elective and emergency surgeries in Baquba teaching hospital for a period of 8 months (from October 2013_ June 2014).

The types of surgeries involved in the study are those of class 1 (clean) and selected cases in class 1 (when prosthesis inserted), class 2 (clean contaminated) and class 3 (contaminated) surgeries (we choosed non-complicated appendicitis in the contaminated group)

The patients age range between 5 and 63 years.

The surgeries were divided non-intentionally (surgeons' policy) and equally into 2 groups

In group 1, the patients are given prophylactic antibiotic dose (Cefotaxime) at the time of induction of anesthesia and another dose intra-operatively if the surgery last longer than 2 hours.

In group 2, the patients did not receive the preoperative antibiotic dose. postoperatively they continue to takes antibiotics for 5 days or until removal of the stiches.

Postoperatively, the antibiotics were given for further 2-4 doses (24-48 hours), if the surgery did not involve insertion of prosthesis; thereafter the patients were given placebo medications. If it did involve insertion of prosthesis, the antibiotics were given for at least five days.

Patients excluded from the study were: (limitation)

Patients who continue using antibiotics for prolonged time (when it is not indicated scientifically) till removal of the stiches or even beyond this, Patients with infective focus in the body, Patients with urinary tract infection, Patients who have infections that can be transferred haematogenously for e.g. otitis media, Malnourished & immunocompramized patients, Patients on immunosuppressive drugs as steroids and chemotherapy, Patients with co-morbid conditions like diabetes mellitus, jaundice, uraemia, hypertension, neoplasia, cardiac or renal disease and anaemia. Any break in aseptic technique, History of recent antibiotic therapy, Allergy to Cephalosporins. Patients who received blood transfusion in the perioperative period. All the patients were advised not to change dressing. The wounds were examined first in the third or fourth day when possible (searching for early complications), and all the wounds were examined at the time of removal of the stiches for the presence of SSI.

RESULTS

Three out of twenty five patients of patients underwent appendicectomy for uncomplicated appendicitis in group 1; developed SSI in the form of cellulitis. and six out of twenty five patients in group 2 developed SSI, five of them in the form of cellulitis and one in the form of wound abscess. P-Value 0.021.

Two out of thirty patients in group 1 and three out of thirty in group 2 underwent laparoscopic cholecystectomy developed SSI in the form of cellulitis. P-Value 0.064.

Two out of thirty (6.6%) patients in group 1 who underwent open cholecystectomy and four out thirty (13.3%) in group 2 developed SSI in the form of cellulitis. P-Value 0.039.

Four out of fifty five patients in group 1 and eleven patients out of fifty five in group 2 underwent abdominal wall herniorrhaphy (umbilical, paraumbilical and ventral hernias) using mesh developed SSI in the form of cellulitis. No one developed abscess. P-Values were 0.023,0.029 and 0.029 respectively for the mentioned 3 surgeries.

Three out of forty in group 1 and six out of forty in group 2 of patients underwent mesh repair of inguinal hernia developed SSI in the form of cellulitis. No one developed abscess. P-Value was 0.293.

No patient out of nine in group 1 in patients underwent elective closure colostomy developed SSI while three patients out of nine (30%) in group 2 developed SSI in the form of cellulitis. In all patients the colon was prepared mechanically using Polyethylen glycol (Coloclean). P-Value was 0.013.

Four out of One hundred and nine patients in group 1 and Five out of One hundred and nine in group 2 of patients underwent clean surgeries developed SSI.

CONCLUSION

Routine perioperative antibiotic prophylaxis doesn't significantly reduce the incidence of postoperative wound infection in clean elective general surgical operations.

In regard to hernia with mesh repair, in our locality, prophylactic antibiotics were of benefit in decreasing the incidence of wound infection.

In regard to laparoscopic cholecystectomy, there was no proved benefit from giving prophylactic antibiotics while it was of benefit in open cholecystectomy.

In regard to uncomplicated appendicitis, the prescription of prophylactic antibiotic was of great value in preventing SSI and even this permit only two doses of antibiotics postoperatively rather than long term use of antibiotics till removal of the stitches and even beyond this.