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Rationality of Perioperative Antibiotic Prophylaxis in Elective Laparoscopic Cholecystectomy

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Laproscopic cholecystectomy is the treatment of choice for symptomatic gall bladder disease. A prophylactic antibiotic are used to reduce the risk of postprocedural local and systemic infections and is regarded as one of the components of an effective policy for controlling healthcare associated infections. [1] Surgical prophylaxis is only an adjunct and not a substitute for principles of asepsis and good surgical technique. Although prophylactic antimicrobials reduce the risk of postoperative wound infections but inappropriately extended use increases the selective pressure favoring emergence of resistance strains. Antibiotics must be used in a rational manner supported by evidence of effectiveness, causing minimal change in host defense mechanism. Elective laproscopic cholecystectomy carries a low risk of wound infections and use of prophylactic antibiotics is not justified in patients undergoing elective, uncomplicated laproscopic cholecystectomy and considered to be irrational but in cases of change of procedure to open cholecystectomy, use of antibiotic is rational. [2, 3, 4] Many surgeons use prophylactic antibiotics in elective laproscopic cholecystectomy in order to reduce the incidence of infection which is already low. [2] The present retrospective observational study was done to investigate and analyze the rationality of perioperative antibiotic use in 220 patients who had undergone elective laparoscopic cholecystectomy from January 2011 to December 2011 in a tertiary care hospital in North India. Data was collected from 'Medical Record Department' and analyzed statistically to evaluate the rationality of antibiotic use in elective laparoscopic cholecystectomy according to Scottish Inercollegiate guidelines network and medical letter guideline. [3, 4]

All patients undergoing elective laproscopic surgery received prophylactic antibiotics (100%). Preoperatively the rate of antibiotic use was single in 88.4% and two in 13% patients. Postoperatively rate of antibiotic use was single in 98.6%, two in 10% and three in 7% cases. (Table 1) Preoperative antibiotic was given to 51.4% patients out of which 44.2% patients received antibiotic 30 min before skin incision and 55.8% received 30min to 60 min before skin incision. Duration of treatment was 2 days in 33.1%, 3days in 32.7%, 4 days in 13.8% and 5 or more days in 20.2%. The choice of antibiotic was similar in preoperative and postoperative

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period. Table 2 shows 2nd generation cephalosporins along with β lactamase inhibitors to be the drugs of first choice followed by 3rd generation cephalosporins alone or in combination with aminoglycosides. Out of 220 patients undergoing elective laparoscopic cholecystectomy the procedure was changed to open cholecystectomy in 7 patients.

The rate of antibiotic used, timing and choice of prophylactic antibiotic administration was not justified and is irrational in patients undergoing uncomplicated elective laparoscopic cholecystectomy. Antibiotic use is rational only in 7 patients (3.1%) in which the procedure was changed to open cholecystectomy and irrational in 213 patients (96.8%). The prophylactic use of antimicrobial in elective uncomplicated laparoscopic cholecystectomy patients is quite irrational, which must be controlled to prevent the emergence of resistant strains, decrease the adverse effects and cost of health care services.

Table1: Number of antibiotic used prophylactically.

	No. of antibiotics Used	Preoperatively n(%) 113(51.4%)	Postoperatively n(%) 217(98.6%)
1.	Single antibiotic	100 (88.4%)	200 (92.2%)
2.	Double antibiotic	13 (11.5%)	10 (4.6%)
3.	3 or more antibiotic	0	7 (3.2%)

Table 2: Choice of antibiotics (irrational)

	Choice of antibiotics	Preoperatively n113 (51.4%)	Postoperatively n217 (98.6%)
1.	Second generation Cephalosporins with beta lactamase inhibitor	80 (70.7%)	180 (92.2%)
2.	3rd generation Cephalosporin with beta lactamase inhibitor	20 (%)	20 (%)
3.	2nd generation Cephalosporin with aminoglycosides	13 (%)	10 (%)
4.	2nd generation Cephalosporins with aminoglycosides and Metronidazole	0	7(3.2%)

Keywords: Scottish Inercollegiate guidelines network (SIGN), Prophylactic, Laparoscopic cholecystectomy

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