



Thesis Title        Evaluation of Antimicrobial Prophylaxis in General Surgery  
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Major Program      Clinical Pharmacy  
Academic Year      2003

### **Abstract**

Antimicrobial prophylaxis in surgery is very important, since this practice can minimize surgical wound infections, which have been proven in several studies. Aims of the study are to evaluate appropriateness of antimicrobial prophylaxis in general surgery setting, to assess the impact of inappropriate antimicrobial prophylaxis on wound infection rate and to assess costs of that inappropriate practice. The study was conducted at 3 regional hospitals in Southern Thailand during November 2002 to April 2003.

Among the 329 surgical patients, 186 patients (56.5%) received appropriate antimicrobial prophylaxis in all aspect, including indication, choice of antimicrobial agents, dose, route of administration, dosing interval and timing of drug administration. Only 215 of 234 patients, who had indications for antimicrobial prophylaxis, received the medication. Of these 215 patients who received antimicrobial prophylaxis, appropriate drug selection, dose and route of administration, dosing interval, timing of drug administration and duration of antimicrobial agents used were documented in 87.0%, 96.7%, 100%, 71.2%, and 75.8% of the patients, respectively. Incidence of postoperative wound infection was 5.5% (18 cases). The group of patients whose antimicrobial prophylaxis was considered inappropriate showed significantly higher infection rate than the group of patients who received the drug appropriately (9.1% vs 2.7%,  $p = 0.011$ ). Sub-group analysis of patients whose timing of drug administration was considered inappropriate showed significantly higher rate of surgical wound infection than patients who received the drug at appropriate timing (within 0 - 2 hours before surgery) (11.3% vs 3.9%,  $p = 0.046$ ). The data estimated in 3 hospitals revealed that appropriate antimicrobial prophylaxis could have saved 1,579,954 Baht per year for the cost of drug and 373,848 Baht per year for surgical wound infection management.. The result from this study suggests that the programe to improve appropriateness of antimicrobial prophylaxis in surgery should be invented and implemented in the participated hospital.