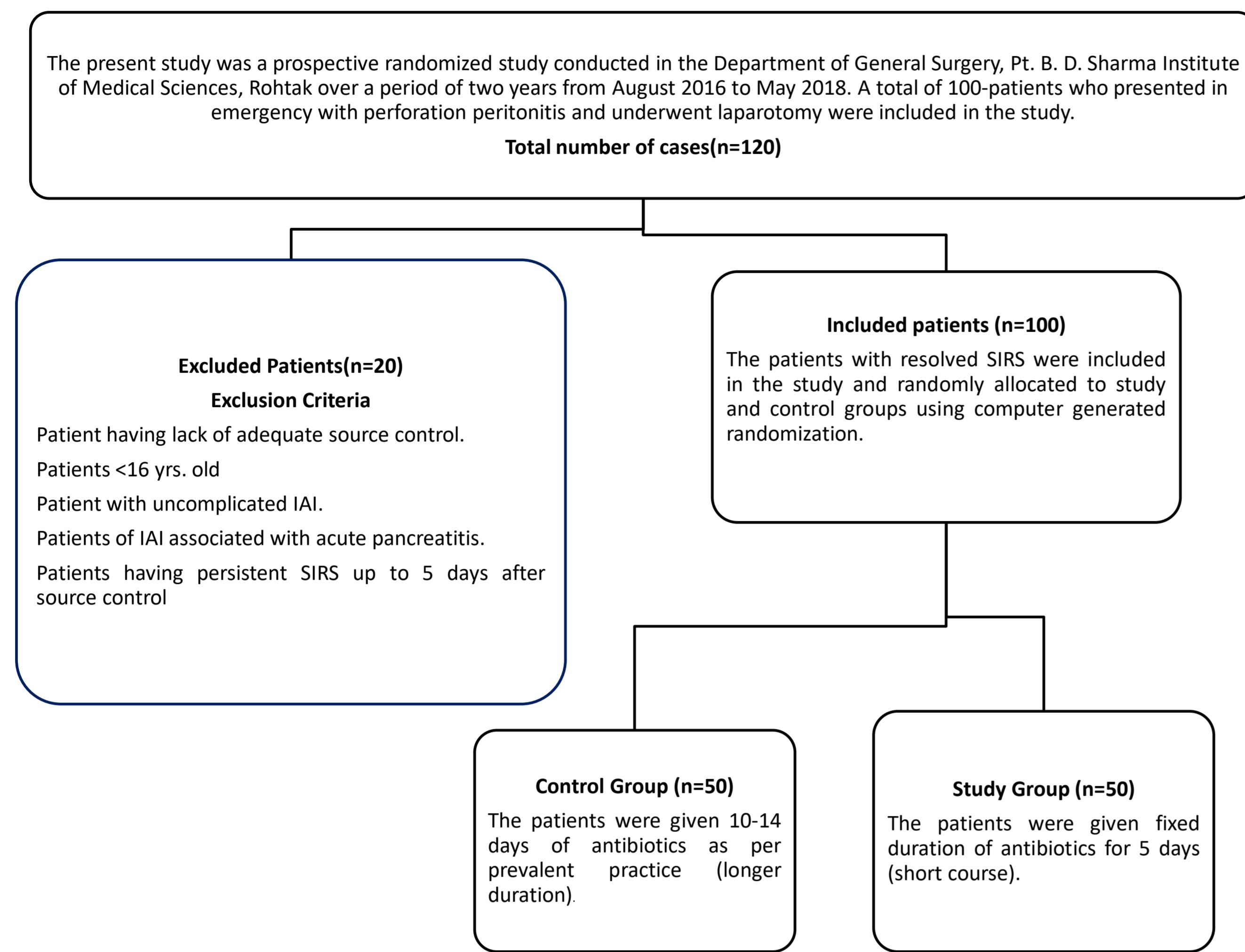


Introduction

In cases with intra-abdominal infections(IAI), after initial resuscitation, source control remains the cornerstone of management.¹ The optimal duration of antibiotics for complicated IAI has been extensively debated. Antibiotic therapy is an important adjunct to source control, and the inadequate and inappropriate use of antibiotics is associated with an increased risk of morbidity and mortality. The major risk of inadequate duration of antibiotic therapy consists of recurrent IAI and its associated problems. However the risk and drawbacks of excessive and prolonged antibiotic treatment are increased cost, drug side effects and introduction of resistant organisms.²

Aim and objectives- To compare the short course antimicrobial therapy with conventional antimicrobial therapy following source control in cases of perforation peritonitis with regards to

- Incidence of surgical site infection, recurrent intra-abdominal infection and extra abdominal infection.
- Duration of postoperative hospital stay and thirty day mortality.
- Duration of antimicrobial therapy and number of antibiotics free days at thirty days.

Methods

•Various prospective randomized trials have shown in the past that in cases with complicated IAIs, after effective source control, the short course of antibiotics are as effective as long course therapy.^{3,5-8}

•Sartelli et al. in an English literature search on Pub Med database observed that in stable patients, a short course of antimicrobial therapy (3–5 days) after adequate source control, was a reasonable option. In critically ill patients with severe sepsis and septic shock, an individualized approach was always mandatory and patient's inflammatory response should be monitored regularly. Procalcitonin may be helpful for guiding antibiotic treatment in critically ill surgical patients and in predicting treatment response.⁹

Table : Duration of antimicrobial therapy (Days)

Study	Short duration antibiotics (days)	Long antibiotics (days)	p-value
Swayer et al 2015	4	8	<0.0001
Smith et al 2017	5	14	<0.0001
Montravers et al 2018	8	15	<0.0001
Present study 2018	5.64 ± 1.77	9.7 ± 2.12	<0.0001

•In present study, first of this kind from India, the study group patients with recurrent intra-abdominal as well as extra-abdominal infections received longer duration of antibiotics but mean duration of antibiotics was 5.64 ± 1.77 days that was significantly shorter than control group cases.

•In all previous similar studies as well as in present study, although the duration of antibiotic therapy was variable, but the duration was significantly shorter in the study group cases leading to decreased overall exposure to antimicrobial agents. The duration of hospital stay and post-operative complications (surgical site infection, recurrent intra-abdominal infection, extra-abdominal infection) were also comparable among two groups.

CONCLUSION-

As observed in the previous trials, the findings of the present study also show that short duration of antibiotic therapy is a key measure in antimicrobial stewardship. It substantially reduces the antibiotic exposure, decreases the chances of MDR infections and is cost effective. Moreover no clinical benefits are observed with long course of antibiotics.

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Results

- Mean age of the patients was 39.82 ± 16.18 years.
- Majority of the patients were males.
- Mean APACHE II score for the study group was 9.20 ± 5.62 and in control group was 7.49 ± 5.17 (range: 0 to 29).
- Most common origin of the infection was the typhoid ileal perforation (50% cases) followed by peptic perforation (35% cases) in both the groups.
- Majority of the perforations (70%) were treated with primary repair in both the groups.
- Commonest organism for intra abdominal sepsis was *E.coli* (34%) followed by *Klebsiella pneumoniae* (21%) in both the groups.
- Surgical site infection was seen in 29 cases (58%) in the study group and in 34 cases (68%) in the control group. ($P =0.300$)
- Recurrent intra abdominal infection was seen in 12 cases(29%) in study group and in 13 cases (26%) in control group. ($P = 0.817$)
- Rates of extra-abdominal infection and persistent infection (>30 days) were comparable among two groups.
- 30 days mortality occurred in four cases each in study as well as control group.
- Mean duration of hospital stay was 12.66 ± 13.22 days in study group and 10.46 ± 6.17 days in control group. ($P=0.289$)
- Mean duration of antibiotics was 5.64 ± 1.77 days in study group and 9.7 ± 2.12 days in control group. ($P<0.0001$)
- Mean antibiotics free days at 30 days were 22.9 ± 4.81 days in study group and 19.36 ± 3.23 days in control group. ($P<0.0001$)

Discussion

- Recent recommendations of the Surgical Infection Society (SIS) and the Infectious Diseases Society of America (IDSA) include limiting the duration of antibiotics to no more than seven days if source control has been achieved. Despite this, significant variability in the duration of antimicrobial therapy continues, with data suggesting that the average length of therapy remains 10 to 14 days.¹
- A recent task force termed AGORA (antimicrobials: a global alliance for optimizing their rationale use in intra-abdominal infections) found that a treatment course as short as four days was sufficient for most patients with complicated IAIs after source control.²
- Another trial named Study To Optimize Peritoneal Infection Therapy (STOP-IT) revealed no significant difference in complications between a short course and a more traditional longer course of antimicrobial agent.³
- The tendency to continue antimicrobial therapy is likely the result of the belief that certain patients are at an inherently greater risk of treatment failure because of their characteristics and the severity of IAI.⁴ It is important to note that some of these complications may be related to inadequate source control, not to failure of antimicrobial therapy.