

Surgical Site Infection After Colostomy Closure In Hirschsprung Disease And Anorectal Malformation: Single-dose vs Multiple doses Prophylactic Antibiotics

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Introduction:

There is no consensus on the use of antibiotics prophylaxis for colostomy closure in the paediatric population.

Objective:

This study aimed to assess the efficacy of single-dose antibiotic prophylaxis in the prevention of surgical site infection (SSI) after colostomy closure in children with Hirschsprung disease (HD) and anorectal malformation (ARM).

Methods:

All children with HD & ARM, aged 12 years and below, with colostomy closure between June 2012 and October 2015 were recruited. Single-dose antibiotics prophylaxis consisting of intravenous *Cefotaxime* and *Metronidazole*, was administered for “study group” during induction of anaesthesia, between March 2014 and October 2015. Patients administered multiple doses antibiotics (intravenous *Cefotaxime* and *Metronidazole* during induction of anaesthesia and were continued up to 24 hours post-operatively), from June 2012 until February 2014, were considered as the “historical group”. Demographic data, types of stoma, operative variables and complications were recorded. Primary outcome measured was SSI. A $p < 0.05$ was considered statistically significant.

Results:

A total of 103 patients recruited, with 53 (HD=3, ARM=50) patients in the historical group and 50 (HD=4, ARM=46) patients in the study group. The number of cases for HD and ARM, demographic distribution, types of

colostomy and duration of surgery were fairly similar in both groups. There were 33 males and 20 females in historical group with the mean age of 7.9 months (range 6.8 – 16.3 months). Among the 50 patients in study group, 34 were males and 16 were females, with the mean age of 8.8 months (range 7.9 – 20.5 months). Double-barrel colostomy in the historical group and study group were 33 and 32 cases, with loop colostomy formation 20 and 18 cases, respectively. Both groups had a mean duration of surgery of around 90 minutes. There were 5 (9.4%) cases of SSI in the historical group and 2 (4%) cases in the study group, with $p=0.438$. Statistical significance in cost reduction by administration of single-dose antibiotics was obtained ($p<0.001$).

Conclusion:

Single-dose antibiotics prophylaxis in colostomy closure has not caused an increase in SSI, with lower cost as compared with multiple doses antibiotics. Therefore, it was cost-effective in the prevention of SSI in children underwent colostomy closure for HD and ARM.