



## Original Article

# Routine Use of Antibiotics in Hernia Surgery in Children: Is It Really Required?

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## Abstract

**Objective:** *Open Inguinal herniotomy in children is most commonly performed day care surgery in paediatric surgical practice. Present study aims to find whether prophylactic use of antibiotics is really necessary in elective hernia surgery in children*

**Material and Methods:** *This was a randomized control trial done over a period of 4 yrs prospectively. Total 200 inguinal herniotomies were done by open method by a single paediatric surgeon over 4 yrs. After randomization 100 were given routine antibiotics (amoxicillin+ clavulanic acid) for 3 days post operatively while 97 cases were not given any antibiotics. 3 Patients in non antibiotics group needed antibiotics as they developed features of sepsis like persistently high fever, increase WBC counts.*

*Outcome measures like hospital stay, fever, wound infections, hematoma formations, recurrence were noted in two groups.*

**Results:** *Statistical analysis showed there was no significant difference between the two groups( $p>0.05$ )*

**Conclusion:** *Routine use of antibiotics in all elective hernia surgery in children is not having any advantage so it should be restricted to either specific groups like congenial cardiac anomalies patients or should be used only if any need arises post operatively.*

**Keywords:** *Paediatric Herniotomy, Antibiotic Protocol, Hernia.*

## Introduction

The use of antibiotics is very common in paediatric surgical practice both prophylactic as well as therapeutic. However there is very little evidence available for prophylactic use in the routine hernia surgery in children which is a surgery of “clean” category<sup>[1-4]</sup>

Present study was conducted in a tertiary care paediatric surgical centre over a period of four years and all cases were operated by a single paediatric surgeon of consultant level.

### Material and Methods

Institutional research board (ethical committee) approval was taken for the randomised controlled study where 200 cases of paediatric open herniotomies in routine elective list prospectively were taken. After taking well informed consent from the parents randomisation was done with a computer program and each case was assigned to one of the two groups.

- Group 1- WAB (with antibiotics) were given Amoxicillin + *Clavulanic acid* for three days from induction.
- Group 2 -WOAB (*without antibiotics*): no antibiotics were given either at induction or post-operatively

All the patients were then observed for routine post operative parameters like fever  $>39^{\circ}\text{C}$ , wound infection, early and late hematoma formation, hospital stay, recurrence till 1 year follow up. In all cases synthetic absorbable suture material was used.

**Table 2:** Distribution of all studied parameters in two groups

PARAMETERS	GROUP I (WAB) n = 103	GROUP II (WOAB) n = 97	p value
Fever	15	12	0.9481
Wound infection	2	3	0.9744
Haematoma formation	8	6	0.9570
Mean hospital stay	24hr $\pm$ 5hr	22hr $\pm$ 5hr	0.9481
Recurrence till 1yr	0	0	-
Mortality	0	0	-

### Discussion

Antibiotics have been used commonly as a tool of fighting against infection in elective operations since their invention. The choice of antibiotics is also changing rapidly as per the surgical scenario. There has been very little literature regarding the regimen of antibiotics as well as their post operative protocol; and often the choice is based on surgeon's experience or the institute antibiotic policy.

However in cases like open paediatric herniotomy which is the day care surgery, the question remains if antibiotics are really needed in all the patients. The literature search did not produce

### Observation & Results

Both groups were comparable in terms of mean age, sex and size of hernia

Table 1 gives age distribution in the two groups. Unpaired t test analysis gives p value equal to 0.8720.

**Table 1:** Age distribution in two groups

AGE	GROUP I (WAB)	GROUP II (WOAB)
0 – 1 yr	28	22
1 – 5 yr	53	45
5 – 12 yr	22	30

By conventional criteria, this difference is considered to be not statistically significant. Hence the two groups were comparable with respect to age.

Table 2 gives the distribution of all studied parameters. Chi-Square test analysis revealed that there was no statistical significant difference between the two groups

many results regarding this in paediatric age group.

Present study therefore compared the two groups in a randomised controlled fashion. Results look similar in two groups and there was no statistical difference in terms of infection, hospital stay, haematoma formation as well as recurrence till 1 year follow-up.

3 patients in Group II (WOAB) showed features of the infection with increase WBC counts and persistently high fever. So they were treated with antibiotics and were transferred to Group I (WAB). There was no mortality in the study and all patient were followed up till one year

post-operatively which showed no recurrence in both groups.

Paediatric herniotomy unlike adult hernia does not need use of any prosthetic material like mesh. Therefore it is a relatively cleaner procedure and routinely done as day-care surgery. Present study showed no extra advantage of giving antibiotics to all the patients, increasing the cost of treatment with very little evidence supporting their use. However in this series the sample size is relatively small to draw very radical conclusions and would probably need to be taken on a large multicentric level where multiple surgeons and different type of population groups are involved.

### Conclusion

This randomised controlled trial showed equal and comparable outcomes in terms of surgical site infection, hospital stay and recurrence rate in two groups suggesting that antibiotic might not be needed in all such cases and their use might be restricted to potentially infection prone cases like children with congenital heart disease for infective endocarditis prophylaxis, vp shunt patients etc.

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