

**CONSERVATIVE MANAGEMENT OF WORM INDUCED INTESTINAL  
OBSTRUCTION IN CHILDREN USING GASTROGRAFIN – AN OBSERVATIONAL  
PROSPECTIVE STUDY****Dr. Abdul Hamid Samoon<sup>\*1</sup>, Dr. Ashiq Hussain Raina<sup>2</sup>, Dr. Ferkhand Mohi-ud-din<sup>2</sup>, Dr. Ajaz Ahmad Shah<sup>3</sup>,  
Dr. Irshad Ahmad Kumar<sup>2</sup>**<sup>1</sup>Consultant, Govt. Medical College Srinagar, J&K, India.<sup>2</sup>Post Graduate Scholar, Govt. Medical College Srinagar, J&K, India.<sup>3</sup>Senior Resident, Govt. Medical College Srinagar, J&K, India.**\*Corresponding Author: Dr. Abdul Hamid Samoon**

Consultant, Govt. Medical College Srinagar, J&amp;K, India.

Article Received on 31/01/2020

Article Revised on 22/02/2020

Article Accepted on 12/03/2020

**ABSTRACT**

**Introduction:** *Ascaris lumbricoides* (AL) is the most prevalent, largest human helminth and the most common cause of small bowel obstruction (SBO) among children in the developing countries. It is manifested in the low socio-economic conditions and poor hygiene. In Kashmir prevalence of AL is found to be **68.30%**. **Methodology:** This study was conducted in the Department of General surgery, Sri Maharaja Hari Singh (SMHS) Hospital an associated hospital with the Government Medical College Srinagar, J&K, India. The prospective study was conducted over a period from October 2017 to September 2018 (One Year) on 186 patients. Gastrografin was given as per weight 2 ml/Kg BW and data was analysed. **Results:** In our study out of **186** patients **118** were males and **68** were females. The mean age was **8.2** years with most common age group of **5-9** years (Range 2-17years). Mean total duration of symptoms was **12.6** h, with passage of flatus in **10.3** h and passage of stools in **14.9** h. Mean interval between hospital admission and oral intake was **19.5** h. The mean total duration of hospital stay was **26.2** h. **7** (3.8%) patients required laparotomy owing to the failure of conservative treatment for 3 days. **Conclusion:** In our study we concluded that Gastrografin is an effective worm obstruction reliever in small children, decreasing the morbidity associated with it.

**KEYWORDS:** *Ascaris lumbricoides* (AL), small bowel obstruction (SBO).**INTRODUCTION**

*Ascaris lumbricoides* (AL) is the most prevalent, largest human helminth and the most common cause of small bowel obstruction (SBO) among children in the developing countries like India.<sup>[1,2]</sup> It is manifested in the low socio-economic conditions and poor hygiene. In Kashmir prevalence of AL is found to be 68.30%.<sup>[3]</sup> Ingested eggs are the infective agents. In intestine larvae are produced which migrate to the lungs, then swallowed back to intestine where sexual forms are produced. Ascariasis causes various intra-abdominal complications like intestinal obstruction (most common), biliary obstruction, cholangiohepatitis, liver abscess, pancreatitis, acute appendicitis, intestinal perforation, granulomatous peritonitis.<sup>[4-6]</sup> Diagnosis and management of worm obstruction is different than other intestinal obstructions, with high morbidity and mortality after surgical intervention.<sup>[7,8]</sup> Conservative management of worm obstruction has gained considerable interest. Gastrografin (Sodium Amidotrizoate 100 mg/ mL, Meglumine Amidotrizoate 660 mg/mL) proven to be effective in adhesive SBO in adults has also been

successfully used in worm obstruction.<sup>[2,9,10,11]</sup> Gastrografin acts as an osmotic agent within the small bowel causing decrease in bowel edema and enhancing bowel motility.<sup>[12]</sup> This study was aimed to evaluate the therapeutic effects of gastrografin in worm obstruction.

**METHODOLOGY**

This study was conducted in the Department of General surgery, Sri Maharaja Hari Singh (SMHS) Hospital an associated hospital with the Government Medical College Srinagar, J&K, India. The prospective study was conducted over a period from October 2017 to September 2018 (One Year) on 186 patients. All the patients with worm obstruction except patients with peritonitis, in shock, failed conservative treatment from referred hospital, bleeding per rectum, were included in the study. Worm obstruction was confirmed by X-Ray abdomen and sonography. The patients were put on NPO (nil per oral) with I.V fluids, nasogastric tube (NGT) was placed for gastric decompression, proctoclysis was done twice a day and analgesics were used for pain relief. Gastrografin as 2ml/Kg Body Weight was given to the

patients through NGT after stomach decompression and was plugged for 2 hours. Abdominal X-Rays were performed after 6, 12, 24, 48 and 72 hours. The patients who did not respond for 3 days including those who developed shock, peritonitis, bleeding per rectum, severe dehydration were taken for surgery and the conservative method was abandoned. Treatment was considered successful when the symptoms and signs got relieved with passage of worms. Before discharge patients were

given single dose of albendazole 15 mg/kg body weight. The patients were observed and the data was recorded and analysed.

## RESULTS

In our study out of 186 patients 118 were males and 68 were females.

**Table 1: Gender distribution.**

S No.	Gender	No. of patients	Percentage (%)
1	Male	118	63.44
2	Female	68	36.55

**Table 2: Age distribution.**

S No.	Age Group (Yr.)	No. of patients	Percentage (%)
1	< 5	47	25.27
2	5-9	109	58.60
3	10-14	22	11.83
4	>15	8	4.30



**Figure: X-ray after giving Gastrografin.**

The mean age was 8.2 years with most common age group of 5-9 years (Range 2-17years). Mean total duration of symptoms was 12.6 h, with passage of flatus in 10.3 h and passage of stools in 14.9 h. Mean interval between hospital admission and oral intake was 19.5 h. The mean total duration of hospital stay was 26.2 h. 7 (3.8%) patients required laparotomy owing to the failure of conservative treatment for 3 days. All of the 7 patients were managed by enterotomy and there was no mortality in our study. Neither of the patients developed any complication from gastrografin.

## DISCUSSION

*Ascaris lumbricoides* (AL) is the largest, most prevalent human helminth and the most common cause of small bowel obstruction (SBO) among children in the developing countries like India.<sup>[1,2]</sup> Bar-Maor<sup>[2]</sup> and Raashid Hamid<sup>[11]</sup> in their studies demonstrated the efficacy of gastrografin in worm obstruction. Gastrografin acts as an osmotic agent within the small bowel causing decrease in bowel edema and enhancing bowel motility.<sup>[12]</sup> It also acts as a wetting agent, makes worms slippery and hence enhancing their evacuation.<sup>[2]</sup>

Males (63.44%) were mostly involved which is in accordance with the other studies done by Ata Erdener,<sup>[13]</sup> and Raashid Hamid.<sup>[11]</sup>

The mean age in our study was 8.2 years with 5-9 year age group most commonly involved. This is in accordance with the studies done by Raashid Hamid.<sup>[11]</sup> and Wardha.<sup>[14]</sup>

The mean hospital stay in our study was 26.2 hr which was in accordance with the study done by Raashid Hamid<sup>[11]</sup> which was 25.20 hr. Failure rate (patients requiring laparotomy), Passage of flatus, evacuation of bowels and starting of orals were in accordance with the above mentioned studies.

## CONCLUSION

In our study we concluded that Gastrografin is an effective worm obstruction reliever in small children, decreasing the morbidity associated with it. It can reduce the hospital burden from this disease and hence increasing the turn over of beds especially in low socio

economic countries, where health resources are low and where this disease is prevalent.

**Funding:** No funding sources.

**Conflict of Interest:** None declared.

**Ethical Approval:** The study was approved by the institutional ethics committee.

## BIBLIOGRAPHY

- Bethony J, Brooker S, Albonico M, Geiger SM, Loukas A, Diemert D et al Soil-transmitted helminth infections: ascariasis, trichuriasis, and hookworm. *Lancet*, 2006; 367: 1521–1532.
- Bar Moar JA, de Carvalho JL, Chappell J Use of Gastrografin in sub acute intestinal obstruction due to *Ascaris Lumbricoides*. *J Pediatr Surg*, 1984; 19: 174–176.
- S.A. Wani , F. Ahmad , S.A. Zargar , P.A. Dar , Z.A. Dar and T.R. Jan Intestinal helminths in a population of children from the Kashmir valley, India. *Journal of Helminthology*, 2008; 82: 313–317. doi:10.1017/S0022149X08019792
- Mokoena T, Luvuno FM. Conservative management of intestinal obstruction due to *Ascaris* worms in adult patients: a preliminary report. *J R Coll Surg Edinb*, 1988; 33: 318-21.
- Thein-Hlaing. A profile of ascariasis morbidity in Rangoon Children's Hospital, Burma. *J Trop Med Hyg*, 1987; 90: 1659.
- Ghawss MI, Willan PL. Subacute non-bolus intestinal obstruction caused by *Ascaris lumbricoides*. *Br J Clin Pract*, 1990; 44: 243-4.
- Louw JH. Abdominal complications of *Ascaris lumbricoides* infestation in children. *Br J Surg*, 1966; 53: 510-21.
- de Silva NR, Guyatt HL, Bundy DA. Morbidity and mortality due to *Ascaris*-induced intestinal obstruction. *Trans R Soc Trop Med Hyg*, 1997; 91: 31-6.
- Saverio S, Catena F, Ansaloni L, Gavioli M, Valentino M, Pinna AD Water-soluble contrastmedium (Gastrografin)valuein adhesive small intestine obstruction (ASIO): a prospective, randomized, controlled, clinical trial. *World J Surg*, 2008; 32: 2293–2304.
- Kapoor S, Jain G, Sewkani A, Sharma S, Patel K, Varshney S Prospective evaluation of oral gastrografin in postoperative small bowel obstruction. *J Surg Res*, 2006; 131: 256–260.
- Raashid Hamid, Nisar Bhat, Aejaz Baba, Gowhar Mufti, Sheikh Khursheed, Sajad A. Wani, Imran Ali, Faheem Hassan. Use of gastrografin in the management of worm-induced small bowel obstruction in children. *Pediatr Surg Int* DOI 10.1007/s00383-015-3793-x.
- Chen SC, Lin FY, Lee PH et al Water-soluble contrast study predicts the need for early surgery in adhesive small bowel obstruction. *Br J Surg*, 1998; 85:1692–1694.
- Ata Erdener, Geylani Ozok, Ozkan Herek, Ahmet Arikan. Abdominal complications of *ascaris lumbricoides* in children.
- Harsh Wardhan, A. N. Gangopadhyay, S. C. Gopal and G. D. Singhal *Ascaris lumbricoides* causing intestinal obstruction in children - a review of 33 cases. *Pediatr Surg Int*, 1989; 4: 88-89.