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Is it possible to predict the need of gastrostomy tube in NICU patients with Short Bowel Syndrome?

Katherine Black

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Research Abstract Title

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Other authors/contributors involved in project: Beth Lyman, Kayla Curiel, David Keeler

IRB Number: [17090540](#)

Describe role of Submitting/Presenting Trainee in this project (limit 150 words):

My mentor helped develop project idea and with further background research, I helped to refine the specific project objective. I was the primary author for the IRB proposal, did the data collection, interpreted the data with the guidance of my mentor, wrote the abstract, and developed a poster which was presented at NASPGHAN and the Pediatric Intestinal Rehabilitation Symposium Fall 2018.

Background, Objectives/Goal, Methods/Design, Results, Conclusions limited to 500 words

Background:

Enteral access has become an essential part of intestinal rehabilitation for the short bowel syndrome (SBS) patient population. Nasogastric tube use has been associated with oral aversion, increased parent burden, and the risk of poor placement. Gastrostomy tubes (GT) avoid those complications, but the optimal placement time is unknown.

Objectives/Goal:

It was the purpose of this study to identify clinical predictors for early GT placement defined as less than 90 days post-abdominal surgery.

Methods/Design:

This was a descriptive retrospective analysis of the SBS patients at our institution to determine if there were factors that would increase a patient's need for GT placement. Patients were included that were born between 1/1/2015-1/1/2017. Data collection included demographics, underlying diagnoses, surgical procedures, parenteral nutrition requirements, and methods of enteral access. Statistical analysis included mean, median, and ranges.

Results:

17 patients met the inclusion criteria (9 male, 8 female). The underlying diagnoses were intestinal atresia (5), complex/isolated gastroschisis (5), volvulus (3), necrotizing enterocolitis (2), total colonic Hirschsprung's disease (1), and small bowel obstruction (1). All patients underwent a bowel resection. The gestational age at resection ranged from 32.1 – 42.2 week. 9 patients required GT placement (52.9%) with the following diagnoses: isolated/complex gastroschisis (3), atresia (3), volvulus (2) and total colonic Hirschsprung's disease (1). 3 patients with GTs underwent a complete ileectomy. 7 patients (77.8%) with GTs placed did not have an ileocecal valve (ICV). 5 patients were discharged home with parenteral and enteral GT nutrition. 4 patients were on full enteral feeds with GT by discharge. GT placement occurred between post-op day 0 and 185 though 1 patient required placement at POD 521 for failure to thrive after hospital discharge. 44% (n=4) were placed prior to 90 days post-operatively.

Conclusions:

In conclusion, there is no individual predictor to guide the placement of an early GT. No correlation was noted between gestational age at resection and necessity of GT. Patients with a complete ileal resection and gastroschisis are more likely to require GT placement as well require parenteral nutrition at discharge. Lack of ICV also may be a predictor for requiring a GT. More studies with a larger population size are needed to further study indicators for GT placement in neonates with SBS.

IS IT POSSIBLE TO PREDICT THE NEED FOR EARLY GASTROSTOMY TUBE IN NEONATES WITH SHORT BOWEL SYNDROME?

Katherine Black MD; Beth Lyman MSN; Kayla Curiel CPNP; David Keeler BSN; Joel Lim MD

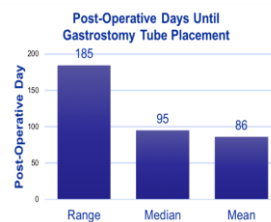
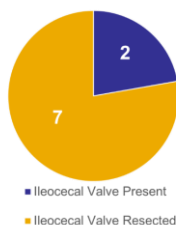
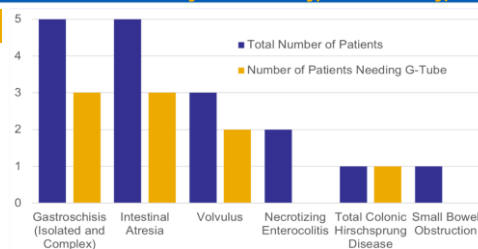
Children's Mercy Kansas City, Kansas City, MO

INTRODUCTION

- Enteral access has become an essential part of intestinal rehabilitation for the short bowel syndrome (SBS) patient population.
- Nasogastric tube use has been associated with oral aversion
- Optimal placement time of gastrostomy tube (GT) is unknown.
- It was the purpose of this study to identify clinical predictors for early GT placement defined as less than 90 days post-abdominal surgery.

METHODS

- Descriptive, Retrospective Analysis of the SBS population treated at our institution's Neonatal Intensive Care Unit
- Date of Birth between 1/1/2015 and 1/1/2017
- Descriptive statistics were used for analysis



DISCUSSION

- Of 17 patients, 9 (52.9%) required GT
- All patients (3) with an ileectomy/ileoceleal valve (ICV) resection and 66% of patients (2) with complex gastroschisis/ICV resection required GT
- 4 patients achieved enteral autonomy with GT prior to NICU discharge
- 1 patient required GT placement after NICU discharge at POD# 521 for failure to thrive (not included in range and mean days)

CONCLUSION

- No one individual predictor
- Patients with complete ileal resection and complex gastroschisis are more likely to require GT
- Resection of ileocecal valve increases the likelihood of requiring GT

REFERENCES

Cohran, Valeria C., Joshua D. Prozialek, and Conrad R. Cole. "Redefining short bowel syndrome in the 21st century." *Pediatric research* 91.4 (2017): 540.
 Ricciuto, Amanda, Robert Baird, and Ana Sant'Anna. "A retrospective review of enteral nutrition support practices at a tertiary pediatric hospital: a comparison of prolonged nasogastric and gastrostomy tube feeding." *Clinical Nutrition* 34.4 (2015): 652-658.

