

# Utility of postoperative anorectal manometry in children with anorectal malformation: A systematic review

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# Background

- Children with anorectal malformation (ARM) may continue to have long term disturbances in bowel function even after corrective surgery
- Anorectal manometry – provide information on the physiological function of the neoanus but data are scarce



# Aims

- 1) To describe the reported protocols and manometric findings in children with ARM post reconstructive surgery
- 2) To investigate the correlation between manometric evaluation and bowel functional outcome

# Methodology

## Data sources

- PubMed, EMBASE, Google Scholar

## Search terms

- “post-op\*,” “anorectal malformation,” “manometry,” “physiology,” “children,” “paediatric”

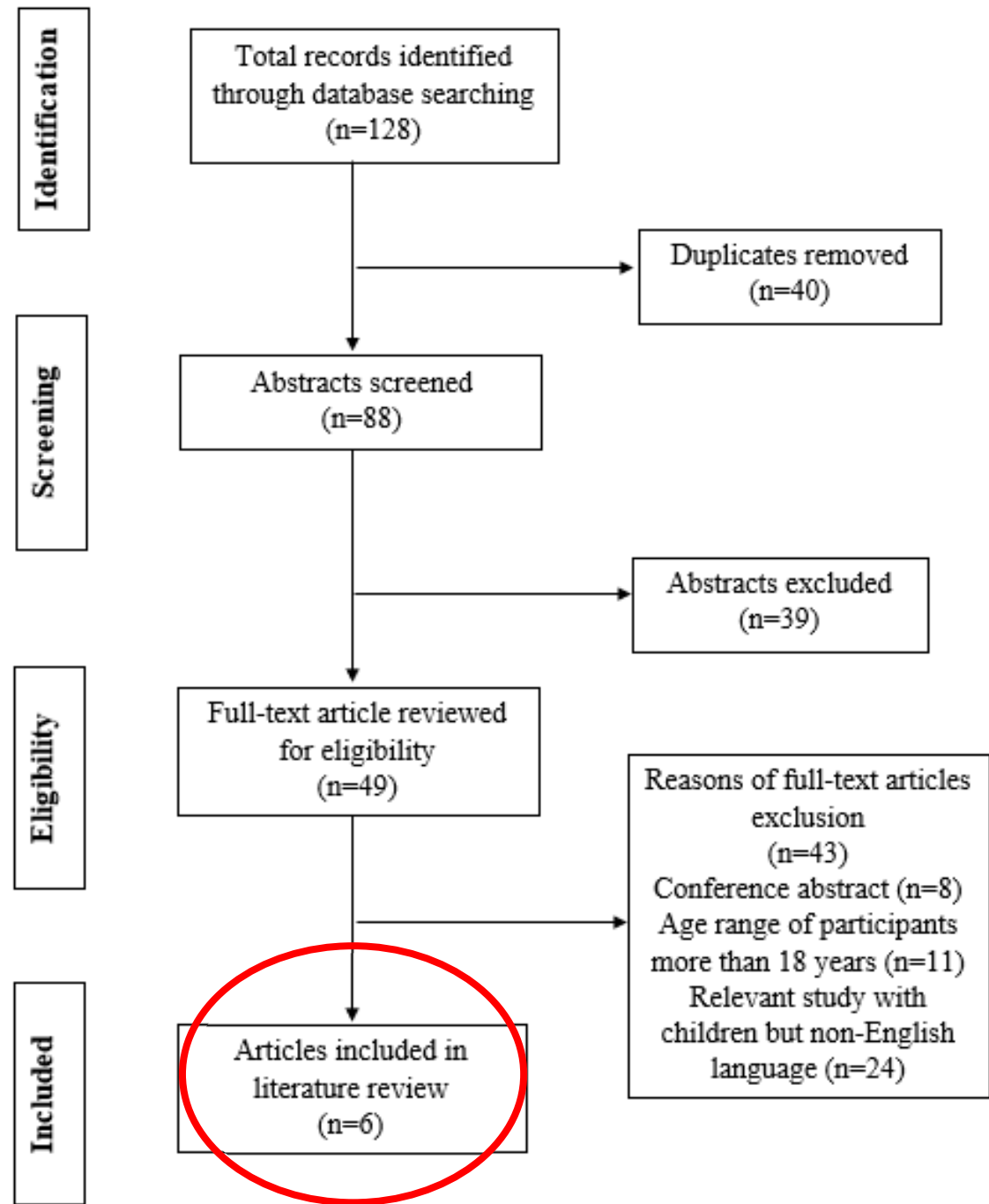
## Study selection criteria

- Inclusion criteria- English articles reporting postoperative assessment of children ( $\leq 18$  years) with ARM using anorectal manometry
- Exclusion criteria- studies with mixed adult & paediatric patient populations







## Study variables

- Patients’ demographics, manometry protocols and manometric parameters described in each study

# Result



## Summary of postoperative anorectal manometric studies of children with anorectal malformation (ARM)

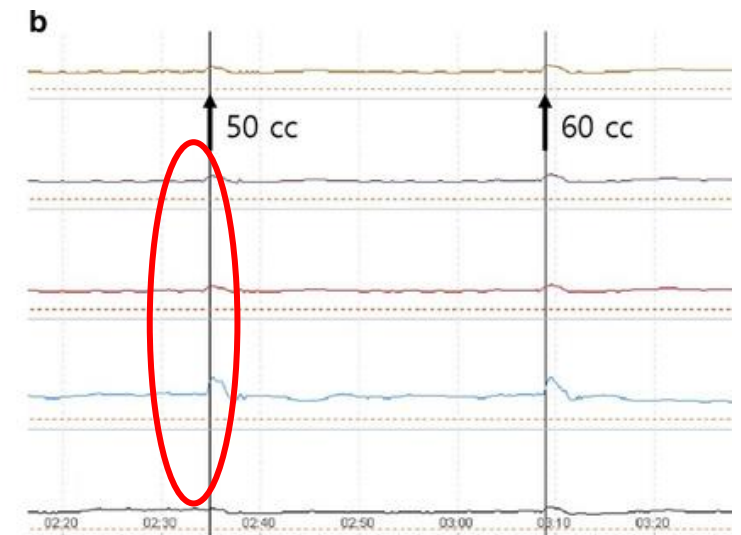
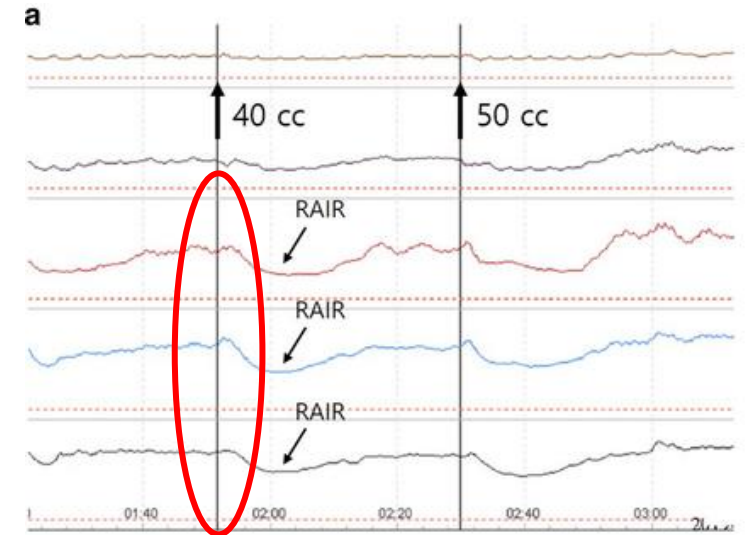
	First author	Age range of participants	Manometry preparation	Sedation/ Anaesthetic
	Hedlund	5-18 years	Not reported	Not reported
	Kumar	6 months-5.9 years	Enema	No sedation
	Martins	4-11 years	Not reported	No sedation
	Mert	5-18 years	70% sorbitol	No sedation
	Nagasaki	3-12 years	Glycerin enema	Ketamine chloride
	Senel	5-8 years	Not reported	Not reported

## Rectoanal inhibitory reflex (RAIR)

- A relaxation response in the internal anal sphincter (IAS) following rectal distension.

- Absent rectoanal inhibitory reflex associated with poor continence

- Hedlund et al., Kumar et al., Martins and Pinus, Nagasaki et al. and Senel et al.



## **Anal resting pressure (ARP)**

- Anal resting pressure- indication of internal anal sphincter (IAS) function
- Lower anal resting pressure associated with incontinence
  - Hedlund et al., Martins and Pinus, Mert et al., Nagasaki et al. and Senel et al.



## **Anal squeeze pressure (ASP)**

- Anal squeeze pressure- indication of external anal sphincter (EAS) function
- Lower anal squeeze pressure associated with incontinence
  - Hedlund et al., Martins and Pinus, Mert et al.

## High pressure zone (HPZ)

- High pressure zone- used to approximate the functional anal canal length
- Shorter high pressure zone in ARM patients
  - Kumar et al., Mert et al

## **Rectal sensation**

- Rectal sensation- measured at various time-points: (1) the lowest volume of air that triggers sensation, (2) volume when the patients feel the urge to defecate, and (3) the maximum tolerated volume
- Absent rectal sensation associated with constipation and soiling issues
  - Hedlund et al.

## **Rectal volume (RV)**

- Larger rectal volume of more than 150 mL associated with constipation issues
  - Hedlund et al.

# Discussion

- There appears to be some correlation between manometric observations and bowel functional outcomes, although these were difficult to interpret due to the non-standardised protocols.
- Particularly in measurements of rectoanal inhibitory reflex, anal resting pressure and anal squeeze pressure.

# Conclusion

- The differences present among the studies in terms of equipment, protocols and definitions used, limit a comprehensive analysis of the utility of anorectal manometry in these children.
- Standardised protocols are required for structured data collection to improve benchmarking and cross-institutional outcome comparison.