

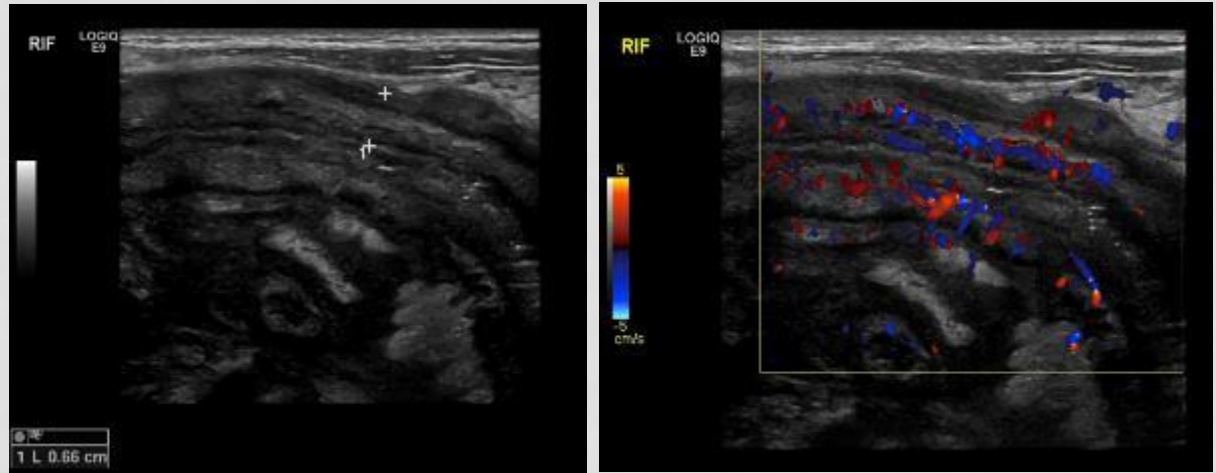


**SMALL BOWEL ULTRASOUND:
A FIRST RATE, FIRST CHOICE, FIRST LINE IMAGING
MODALITY FOR INFLAMMATORY BOWEL DISEASE
IN THE PAEDIATRIC POPULATION**

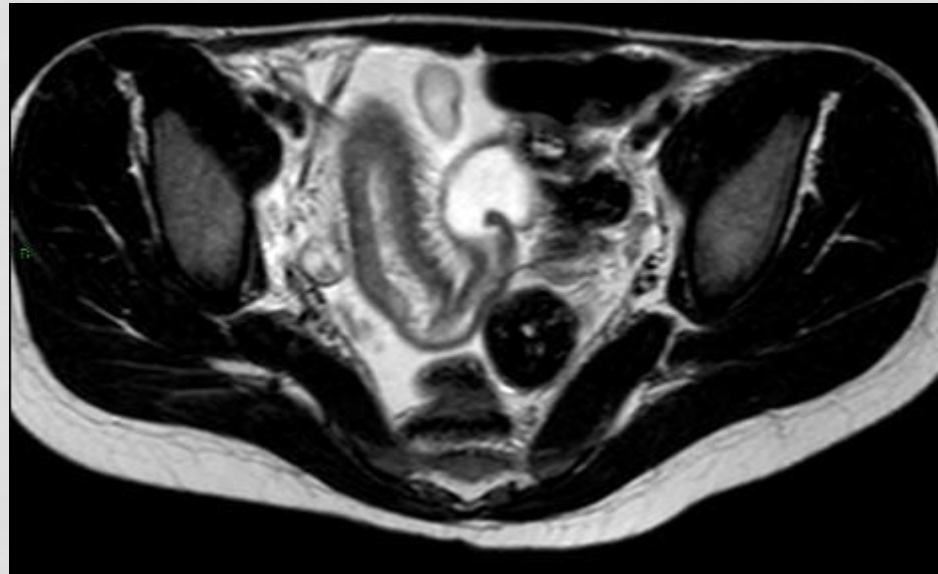
*J BRETHERTON, C ELLIOTT, S KEFAYATI, K PLANCHE, I BEAL, J
MACLACHLAN*

BACKGROUND

US:
30 mins
60 euros
No specific
prep



MRE:
30 mins scanner
time, 1h in
department for
oral contrast
250 euros
Oral contrast and
buscopan



BACKGROUND

Clin Radiol. 2017 Jul;72(7):590-597. doi: 10.1016/j.crad.2017.02.008. Epub 2017 Mar 14.

There is good agreement between MR enterography and bowel ultrasound with regards to disease location and activity in paediatric inflammatory bowel disease.

Barber JL¹, Maclachlan J², Planche K², Furman M³, Crespi D³, Bab N³, Beal I².

- No statistically significant difference between US and MRE in identification of presence of abnormality or of disease activity.

Pediatr Radiol. 2018 Jun;48(6):843-851. doi: 10.1007/s00247-018-4084-1. Epub 2018 Apr 13.

Detecting inflammation in inflammatory bowel disease - how does ultrasound compare to magnetic resonance enterography using standardised scoring systems?

Barber JL^{1,2}, Zambrano-Perez A³, Olsen ØE¹, Kiparissi F³, Baycheva M³, Knaflez D³, Shah N³, Watson TA⁴.

- US detects as much clinically significant bowel disease as MRE.

AIMS






- SBUS done in our institution is accurate and economical
 - Do our patients prefer ultrasound or MRI?

METHODS

Small Bowel MRI/Ultrasound Paediatric Patient Experience Survey

We would like feedback on small bowel ultrasound and MRI in children so that we can improve our service and see whether one test is preferred over the other.

Please fill in the box or circle the best answer and return this form to the main reception (FAC Dr Josephine Scobell) or to the doctor/radiographer who gave you the form. Parents/guardians please feel free to help young children and add any comments in the last box (we care about your experience too!). Many thanks for your participation.

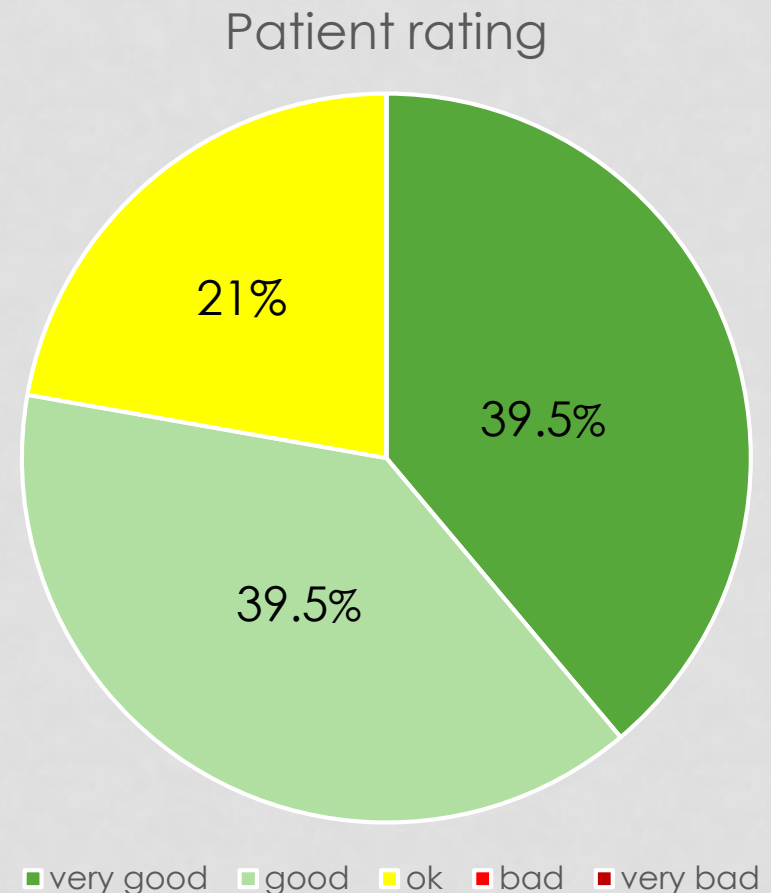
Your age					
Scan	Ultrasound		MRI		
Setting	Inpatient (you are staying overnight in hospital)		Outpatient (you came from home or clinic)		
Have you had this test before?	Yes	No	Not sure		
How did you find this test?	 Very good	 Good	 OK	 Bad	 Very bad
What did you like?					
What didn't you like?					
Any other comments					
Would you mind having this test again if it is needed?	I would have the test again)		I would not have the test again		
Have you had the other type of test (ultrasound/MRI) before?	Yes	No	Not sure		
If yes, which did you prefer?	MRI	Ultrasound	Neither/not sure		
(and why?)					
Parent/guardian comments (optional)					

RESULTS

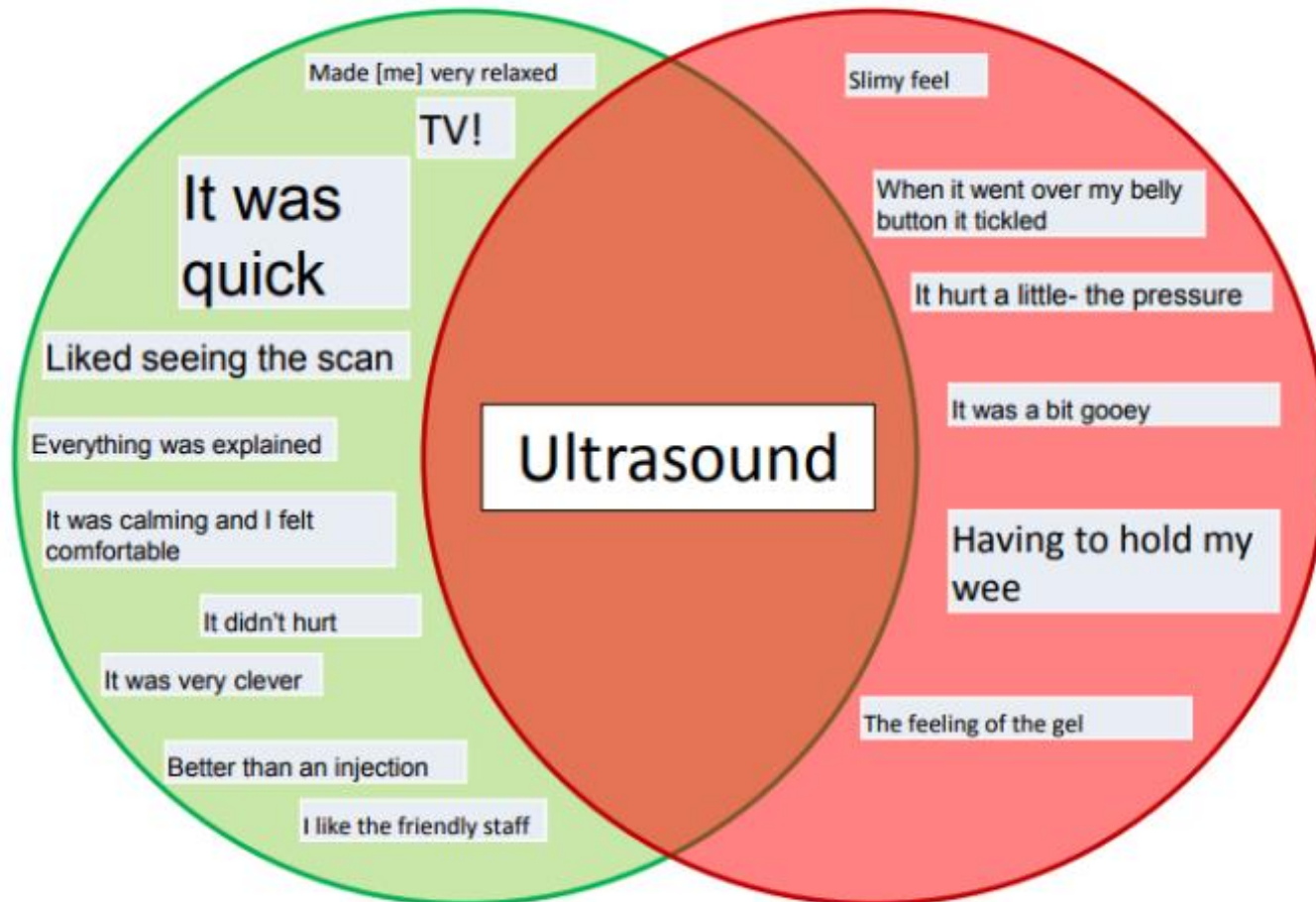
- 3 month study period
- 47 children had small bowel imaging (40 ultrasound, 7 MRE)
- 24 patients completed survey (18 ultrasound, 6 MRE)
- Age range 3-16 years (mean 11.1)

RESULTS: ULTRASOUND

- Survey uptake 45%
- No negative ratings
- 100% happy to have again.

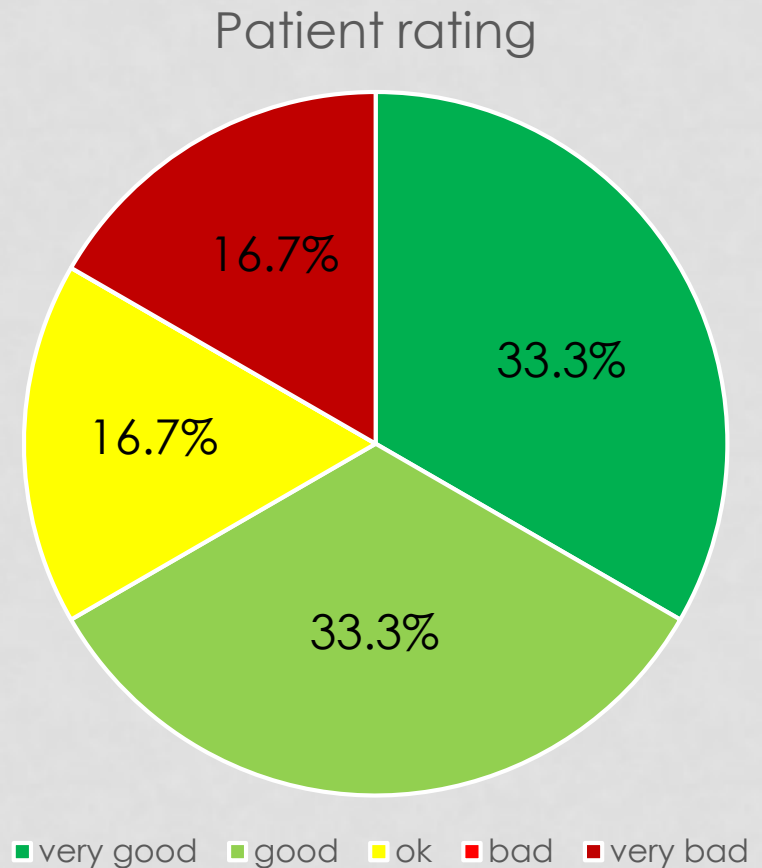


COMMENTS SUMMARY

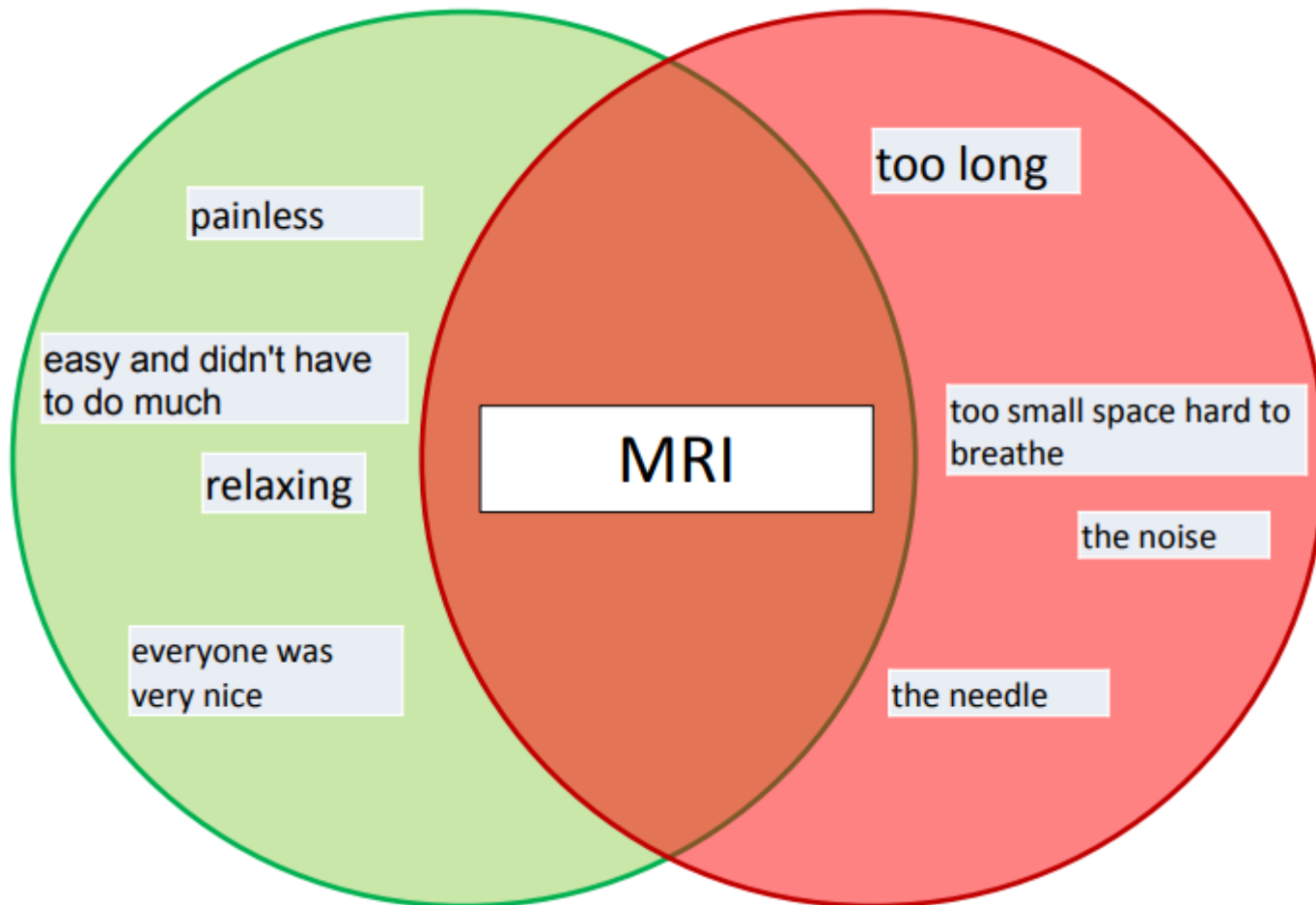


RESULTS: MRI

- Survey uptake 86%
- 16.7% rated very bad
- 67% would have test again (95% CI 51.3-82.1)
- 33% would not have again



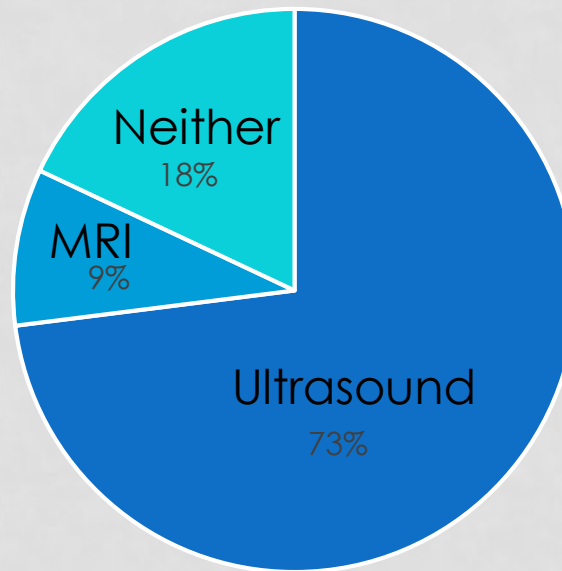
COMMENTS SUMMARY



RESULTS: PATIENT PREFERENCE?

- First scan for 29%
- 46% had experience of both US and MRE

Patient Preference



■ Ultrasound ■ MRI ■ Neither

DISCUSSION

- Limitations: small numbers, poor survey uptake in ultrasound, <50% had experience of both scans
- However: results do favour ultrasound
- New prep letter created to address negative comments about full bladder in ultrasound
- Presented to referring clinicians

CAVEATS

- Ultrasound requires specific training and experience
- MRI early on can be useful for roadmap
- MRI may be more helpful if complex case/variant anatomy
- If patient needs perianal MRI, MRE at same appointment may be more pragmatic

CONCLUSION

- We propose that (in the right context), ultrasound is a good first line imaging modality for assessing small bowel disease in paediatric IBD as it is:
 - economical
 - accurate (with experienced operator)
 - ***favoured by patients***
- Little in literature on paediatric patient preference
- IBD patients are often frequent attenders-optimising their experience is important

REFERENCES

Barber JL, Maclachlan J et al. *There is good agreement between MR enterography and bowel ultrasound with regards to disease location and activity in paediatric inflammatory bowel disease.* [Clin Radiol](#). 2017 Jul;72(7):590-597. doi: 10.1016/j.crad.2017.02.008. Epub 2017 Mar 14.

Barber JL, Zambrano-Perez A et al. *Detecting inflammation in inflammatory bowel disease - how does ultrasound compare to magnetic resonance enterography using standardised scoring systems?* [Pediatr Radiol](#). 2018 Jun;48(6):843-851.

Taylor S et al. *Diagnostic accuracy of magnetic resonance enterography and small bowel ultrasound for the extent and activity of newly diagnosed and relapsed Crohn's disease (METRIC): a multicentre trial.* *The Lancet*. 2018 Jun.