

# Diagnostic outcomes of MRE as an investigation for NSS of small bowel disease: Can CTE be a cost-effective alternative in patients above 50 years old?

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## Background

There was a local perception that there were a large volume of MRIs of small bowel which were requested for non specific symptoms. Recent literature (Lie et al, 2017) demonstrated high diagnostic accuracy of CTE (CT enterography) comparable to MRE (magnetic resonance enterography). CTE costs less and takes less time to report. The aim of this audit is to assess diagnostic outcomes of MRE in patients with non-specific symptoms (NSS) of small bowel disease (SBD) and evaluate the cost-effectiveness of CTE.

## Methods

A retrospective analysis of MREs requested from 1st August 2018 till 31st January 2019 was done. Patients were stratified into different age groups. Data regarding the cost, scanning time and reporting time are reported according to the local trust practices.

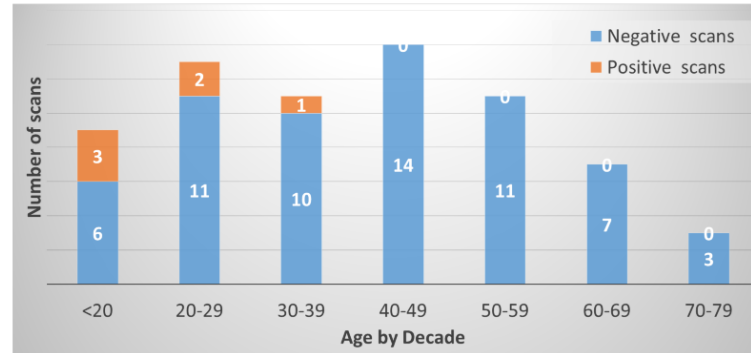


FIGURE 1: Number of positive and negative MRE scans in different age groups

Age	Number of scans converted to CTE	Cost saving £	Time saving (mins)
50-59	11	631.84	85.25
60-69	7	402.08	54.25
70-79	3	172.32	23.25
Total	21	1206.24	162.75

Table1: The cost and time savings of MRE scans converted to CTE in different age groups

## Results

- 160 MREs were analyzed. The average age of patients was 42.8 (16-79) years.
- MREs were performed for NSS in 42.5% of patients.
- The highest percentage of NSS scans were in patients below 20 years (64%) with positive findings in 33% of the scans.
- None of the patients above 40 years old had any positive NSS scans (n=35).
- In patients above fifty, 21 scans for NSS (36.2%), none of which were positive for SBD.
- Reporting time for MRE (23.5min) is 1.51 times CTE (15.5min).
- Cost-effectiveness analysis shows switching to CTE for NSS scans in the over 50's can save 162.75min of reporting time and save £1556.24 (5.8%) of the current expenditure.

## Conclusion

The percentage of positive findings of MREs done for NSS falls with age. None of those scans done for patients aged over forty was positive for SBD. CTE can provide more a cost-effective alternative to MRE, without losing diagnostic quality, in patients aged over fifty with NSS.