

National multicentre audit of current UK practice in the use of abdominal x-rays for the investigation of acute abdominal pain

The Radiology Academic Network for Trainees (RADIANT)

Background

There is widespread variation in the utilisation of abdominal radiographs (AXRs) for the investigation of acute abdominal pain (1). The aim of this audit was to 1: examine AXR request compliance with national RCR iRefer guidelines (2), and 2: examine the clinical value of AXRs.

Methods

All AXRs performed in the setting of acute abdominal pain across 14 UK hospitals during a week in March 2019 were examined against the iRefer guidelines. (1)

iRefer indications for AXR (summary)

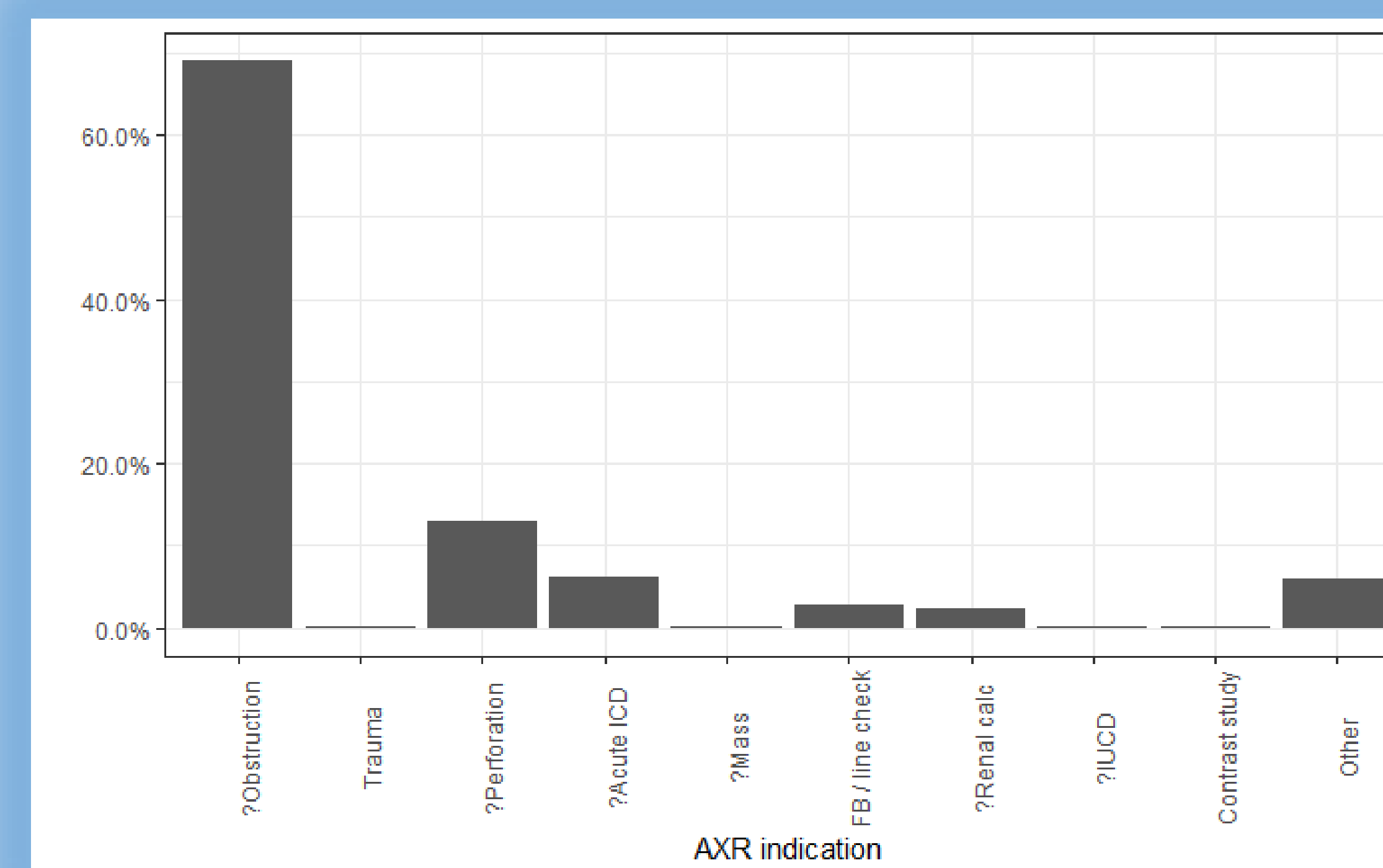
- Clinical suspicion of obstruction
- Acute exacerbation of inflammatory bowel disease
- Palpable mass (specific circumstances)
- Constipation (specific circumstances)
- Acute and chronic pancreatitis (specific circumstances)
- Sharp/poisonous foreign body
- Smooth and small foreign body, e.g., coin, battery (specific circumstances)
- Blunt or stab abdominal injury (specific circumstances)

The audit was performed through the recently formed RCR Radiology Academic Network for Trainees (RADIANT).

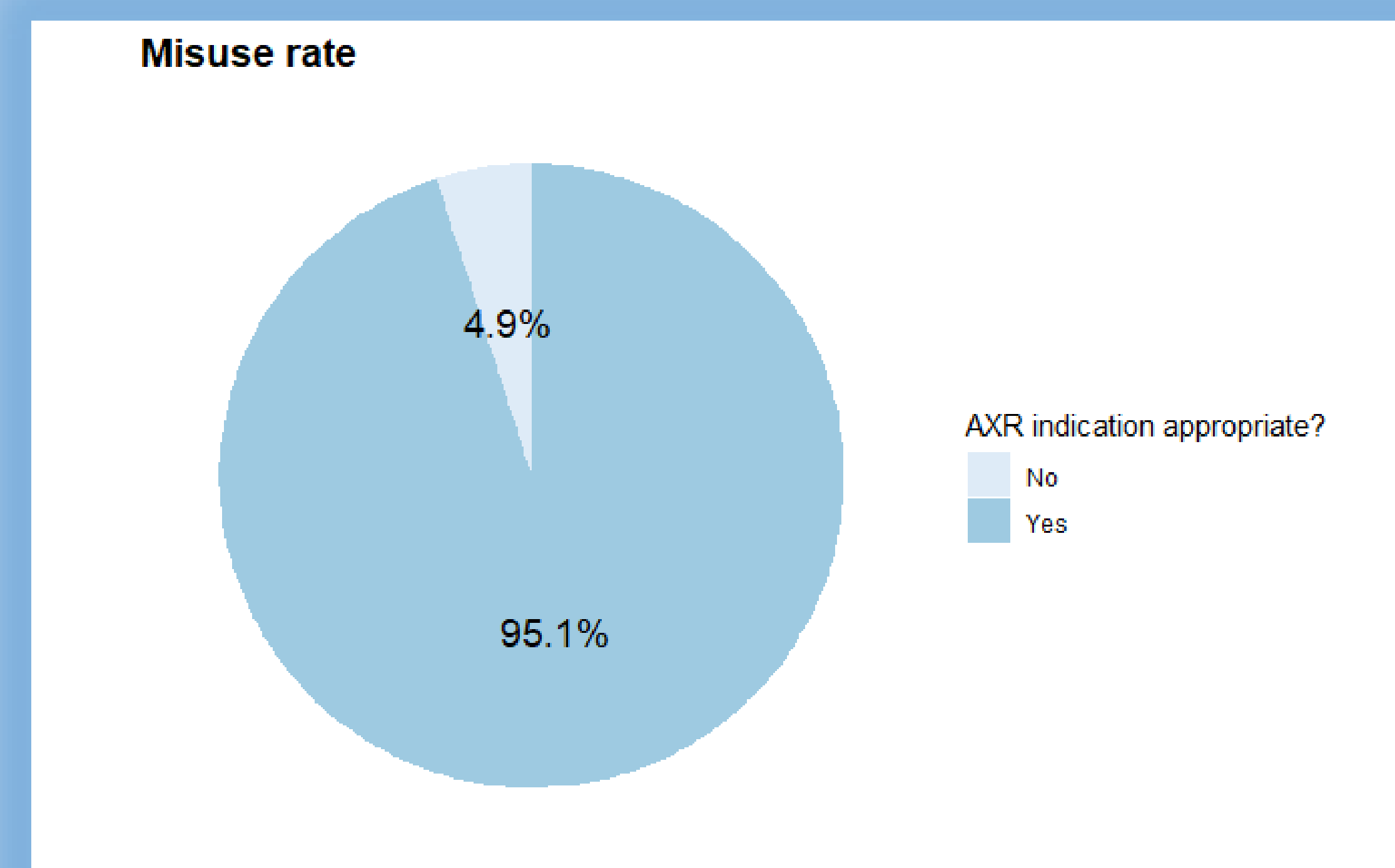
References

1. Boermeester, M., Gans, S., Stoker, J. and Boermeester, M., 2012. Plain abdominal radiography in acute abdominal pain; past, present, and future. *International Journal of General Medicine*, p.525.
2. The Royal College of Radiologists (2020) *RCR iRefer guidelines*, Available at: <https://www.irefer.org.uk/guidelines>

Results

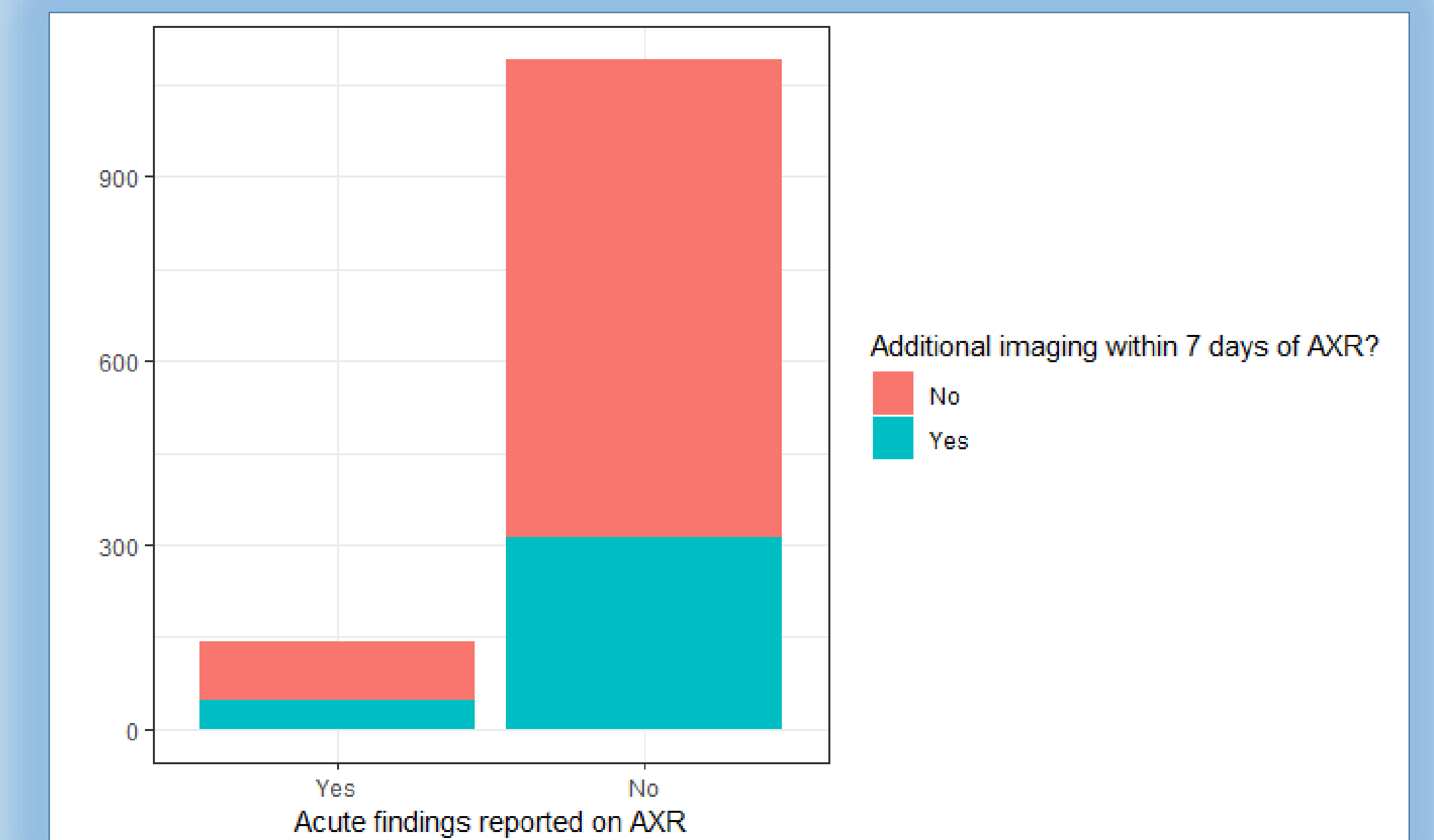


- In total, approximately 50000 radiographs were performed in one week (across all participating centres).
- 1540 of these were AXRs to investigate acute abdominal pain.



- 95.1% (1464/1540) of AXRs were requested in accordance with iRefer guidelines.

- 42.4% (653/1540) of patients who had an AXR underwent subsequent imaging for abdominal pain within seven days.
- 31.2% (204/653) of these subsequent studies were performed before the AXR was reported.



- **No statistically significant difference ($\chi^2 (1, N=1232) = 1.19, p=0.28$) in the number of patients who underwent additional imaging within seven days between those who did have acute findings reported on AXR (33% (47/141)) and those who did not (28% (311/1091)).**

Conclusion

- The majority of AXRs are requested in accordance with national guidelines.
- However, a large proportion of patients undergo further cross-sectional imaging.
- Furthermore, patients with and without acute AXR findings are equally likely to undergo further imaging.

These findings cast doubt over the value of AXRs in the acute setting.