Investigating the appropriateness of CT Abdomen Pelvis requesting following the diagnosis of unprovoked VTE

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BACKGROUND

- Malignancy is a risk factor for VTE
- Patients often undergo CTAP after an unprovoked PE or DVT is diagnosed
- NICE guidance NG158 (March 2020): *'Do not offer further investigations for cancer to people with unprovoked DVT or PE* ***unless*** ***they have relevant clinical symptoms or signs****'.*

Existing literature

- Hussain et al. (Leicester, 2016)
  - Unprovoked VTE => CT-AP
  - Cancer detection rate of 2.3%
    - All had additional red flags on clinical review
  - False positive rate of 5.2%
- Healy et al. (Cambridge, 2020)
  - Unprovoked VTE => screening mammogram + CT-AP
  - Cancer detection rate of 1.8%
  - False positive rate of 14%
- Both no longer perform CT-AP for unprovoked VTE

Aims

1. Is NICE guidance NG158 adhered to across UHB FT?
2. What proportion of non-compliant CT-APs accurately diagnosed a cancer?

STANDARD

100% of all CTAPs requested following a diagnosis of unprovoked VTE must be have undergone appropriate prior assessment, the nature of which must be clear in the request.

METHODOLOGY: **SELECTING CASES**

- Date 01/01/2021 to 30/11/2022
- CTAPs requested following unprovoked VTE to investigate for occult malignancy
  - Searched '*Unprovoked*' in clinical history and then manually filtered

METHODOLOGY: **DATA COLLECTED**

- 2 main data points for each study:

1. Did the request indicate appropriate preceding assessment to warrant a CTAP?
2. Findings of the CTAP
   - If possible malignancy was found, was it subsequently confirmed or disproved?

RESULTS

- 155 CTAPs in 23 months
  - 32 at QE
  - 123 at HGS *(79%)*

17 requests (11%) met NICE guidance

Figure 1: Was the CT-AP request appropriate per NICE NG158 guidance

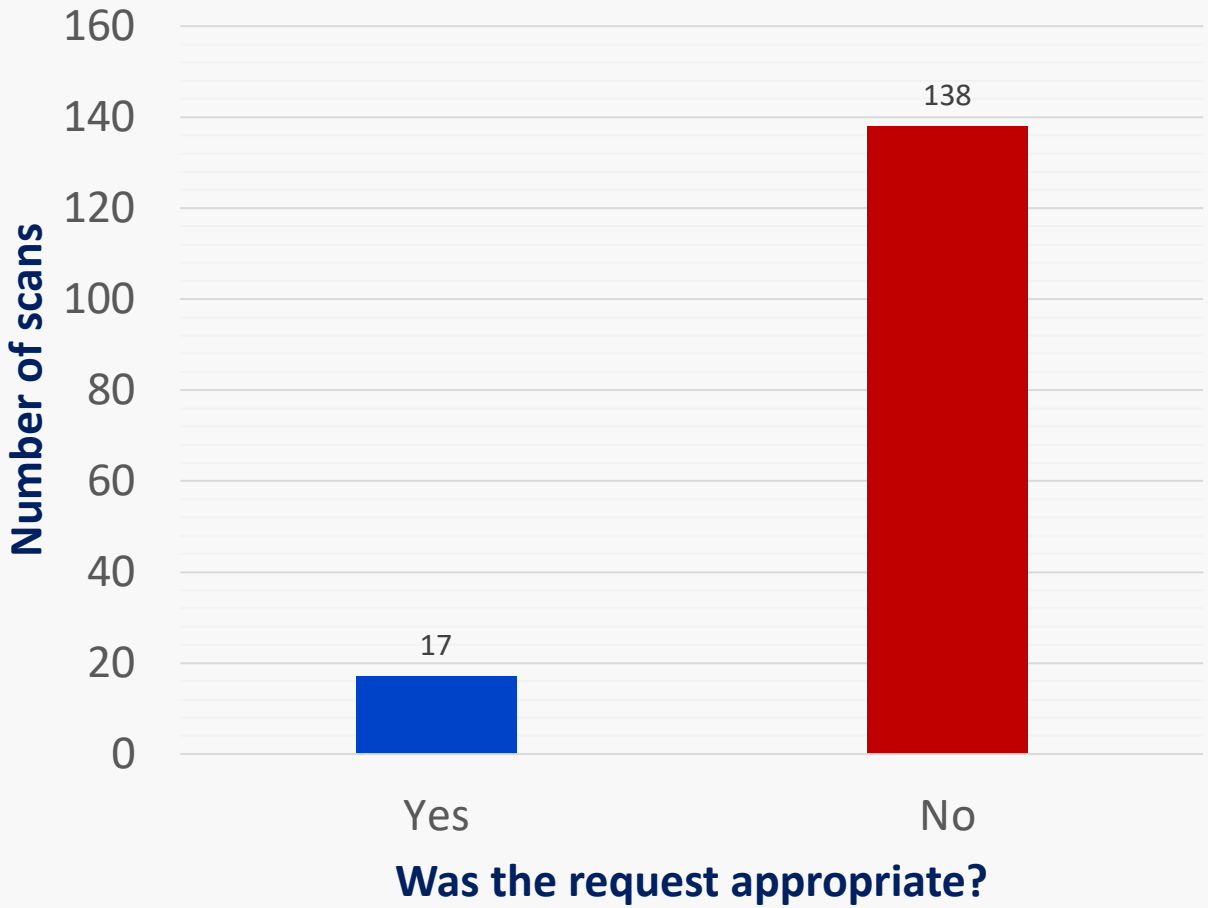
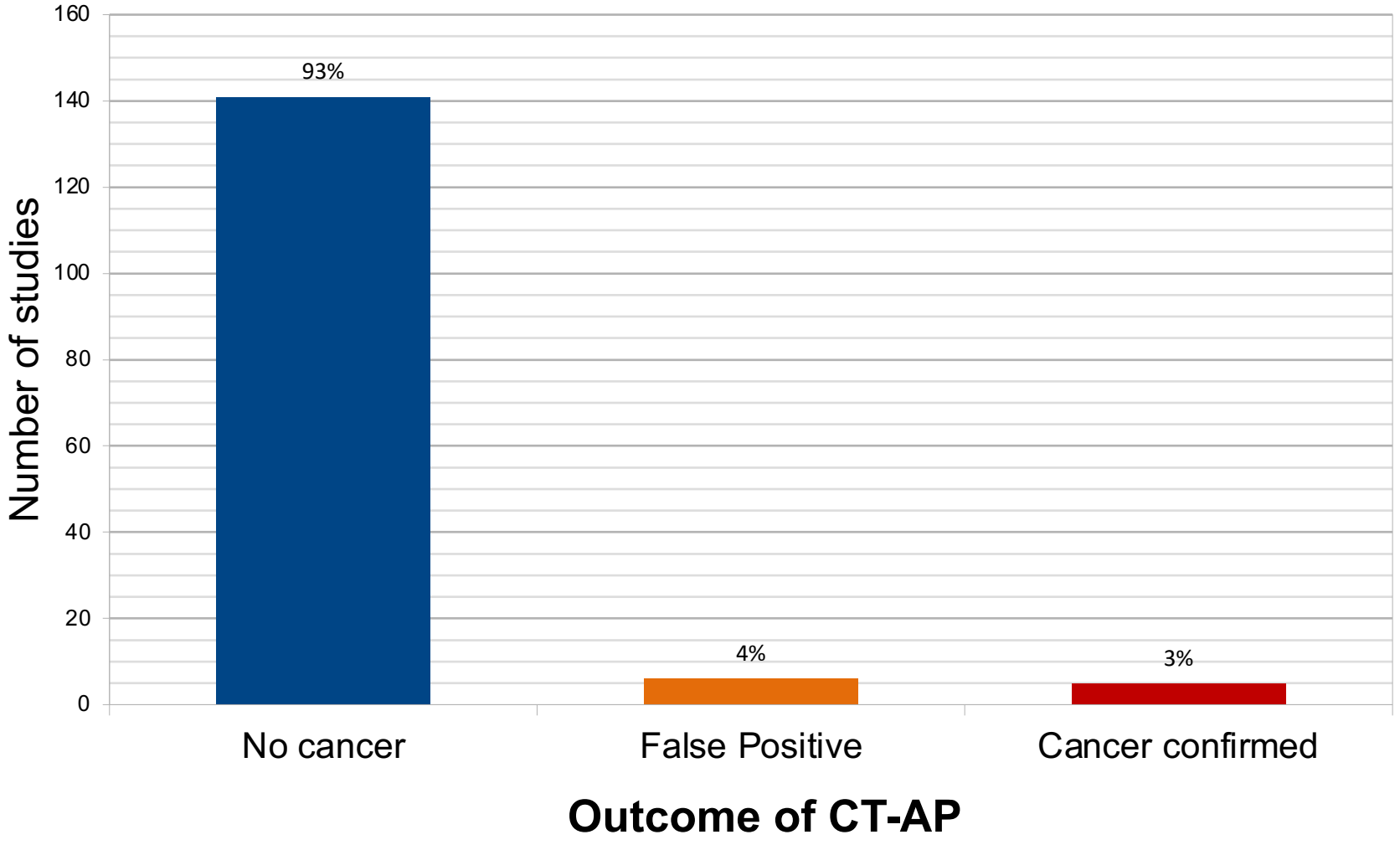


Figure 2: Was a cancer identified on the CT-AP?



Positive studies

- Five studies resulted in confirmed cancer
  - 4 had prior appropriate investigations (e.g. history of weight loss, LFTs suggesting liver mets)
  - 1 study did not (sigmoid cancer)

DISCUSSION

PRIMARY OUTCOME: WERE REQUESTS APPROPRIATE

100% of CT-APs requested following a diagnosis of unprovoked VTE must be have undergone appropriate prior assessment, the nature of which must be clear in the request.

PRIMARY OUTCOME: WERE REQUESTS APPROPRIATE

No (11% met NG158 guidance)

PRIMARY OUTCOME: WERE REQUESTS APPROPRIATE

- Scans without prior workup:
  - Very low yield of true positive findings (<1%)
  - Many false-positive findings (4%)
  - Burden on investigative capacity

SECONDARY OUTCOME: CANCER PICKUP RATE

- *Is breaching NG158 justified in our local population?*
  - **No**
- Single positive case
- Findings echo previous literature

INTERVENTIONS

- Education on the application of NG158
  - Clinicians can refine their requesting practice
  - Radiologists can confidently vet scans

- Dissemination of findings:
  - REALM
  - Email
  - Grand rounds – *more scans at HGS*

LIMITATIONS

1. Investigations may have been performed, but not mentioned in the request

2. Searched the term ‘unprovoked’
   - Underestimation of volume of CTAPs performed?
   - Alternative would be a manual search of all CTAPs

REFERENCES

- 1. Andrew Lynch, Alistair Gummow and Gill McCulloch (2018) “Do investigations for cancer in patients with spontaneous VTE (DVT or PE) improve patient outcomes (morbidity and mortality)?,” in Clinical Radiology.
- 2. Healy, N.A., Daley, F.C. and Sinnatamby, R. (2020) “Unprovoked venous thromboembolism in women over 40: is screening for occult malignancy with mammography and abdominopelvic CT of benefit?,” Clinical Radiology, 75(10), pp. 757–762.
- 3. Hussain, T.I. et al. (2016) Investigation of unprovoked venous thromboembolism: a case for a tempered approach?, Clinical Radiology. Available at: https://www.clinicalradiologyonline.net/article/S0009-9260(16)00101-X/fulltext#%20 (Accessed: March 10, 2023).
- 4. NICE (2020) Recommendations: Venous thromboembolic diseases: Diagnosis, management and thrombophilia testing: Guidance, NICE. Available at: https://www.nice.org.uk/guidance/ng158/chapter/Recommendations (Accessed: March 10, 2023).