BACKGROUND
A cut-off measurement of 11cm makes incidental splenomegaly on imaging common, with mild enlargement most often a benign finding.

Causes of splenomegaly are numerous, including infection (e.g. infectious mononucleosis), cirrhosis, haematological disease (e.g. haemolytic anaemia) and malignancy.

Symptoms are often driven by the underlying aetiology and are non-specific. Patients may experience left upper quadrant pain and reduced appetite.

Incidental splenic lesions are less common, with frequent uncertainty regarding follow-up and optimal imaging modality.

The purpose of this retrospective study is to suggest optimal initial imaging, which lesions can and should be subject to biopsies and appropriate follow up strategies. Furthermore, the study aims to give an overview of the most commonly encountered splenic lesions.

METHODS AND MATERIALS
In this retrospective study all adult patients with incidental splenomegaly or focal splenic lesions referred to the Haematology MDT in a large UK multidisciplinary NHS Trust from January 2014 to January 2018 were included. Incidental splenomegaly was defined as measuring ≥11cm length in a coronal plane with either Computed Tomography (CT) or ultrasound (US) imaging.

Initial and subsequent imaging was reviewed, whilst diagnosis and clinical outcomes were established by analysing outpatient clinic letters using the local available electronic records.

Laboratory and pathology results were reviewed in the context of imaging findings and clinical letters. This included patients subsequently transferred to the local tertiary centre (Leeds Teaching Hospital Trust).

Total duration of follow-up was included in the data, with review of any changes in the spleen appearances on imaging.

Follow-up imaging included ultrasound, CT, and MRI with varied protocols according to the clinical question to be answered.

RESULTS
Forty-two patients were referred to the haematology MDT with splenomegaly (mean 16.1cm, range 11cm-24cm), or focal splenic lesions. A splenic length >14cm was seen in 29 (69%) patients, 6 (20%) of which had laboratory or pathological diagnostic features of haematological disease (malignancy or myeloproliferative disorders).

A splenic length of <14cm was less commonly referred to the MDT and seen in 4 (10%) patients, only 1 patient (12cm spleen) had a subsequent diagnosis of lymphoma.

Nine patients (21%) had focal splenic lesions on imaging, but only 2 of these were subsequently attributed to malignancy (falciform lymphomas). Remaining splenic lesions were either cysts, reactive changes, metastases from a known primary or granulomatous disease.

The duration of clinical and radiological follow-up varied (mean 20 months). Eight patients were seen and discharged without follow-up after clinical/laboratory assessment. US was the modality of choice to follow-up patients with no proven malignancy, whereas MRI proved to be the most effective method of characterising splenic lesions in ambiguous cases. One patient was transferred to the tertiary centre for PET imaging.

During the follow-up period, in the majority of cases the spleen size remained stable. However, in 3 cases the size of the spleen increased and in 2 the size decreased.

CONCLUSION
The majority of incidental mild splenomegaly cases <14cm referred to the haematology MDT proved to be benign disease over the follow-up period. A large proportion of severe splenomegaly was related to malignancy or myeloproliferative disorders.

Ultrasound is the preferred modality for monitoring splenic length in patients without malignancy. MRI proved to be the most effective imaging in characterising focal lesions.

RECOMMENDATION
A prospective study enrolling all patients with isolated clinical or radiological splenomegaly should be undertaken to assess initial imaging findings and follow-up, determining clinical diagnosis and outcomes. This will enable pathway design to ensure consistent investigation and follow-up in future cases. In turn, that should help avoid prolonged follow-up of benign splenomegaly cases.

REFERENCES
3. O Abdel-Hadi, M Fronza, N Spencer

Splenomegaly and Splenic Lesions: A Retrospective Review

Table 1 - Causes of splenomegaly identified on imaging

- Cysts
- Haemangioma
- Haematological Disease
- Malignancy
- Granulomatous disease
- Reactive

Table 2 - Causes of splenomegaly on imaging

- Benign
- Cirrhosis
- Haematological Disease
- Malignancy
- Infection

Table 3 - Duration of follow-up

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Figure 1 - Axial contrast enhanced CT demonstrating gross splenomegaly in confirmed T cell lymphoma

Figure 2 - Axial contrast enhanced CT demonstrating splenic cysts

Figure 3 - Axial T2W MRI demonstrating multiple haemangiomas