

THE DIAGNOSTIC YIELD OF BONE MARROW BIOPSY IN PATIENTS WITH LIVER FAILURE

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BACKGROUND

Cytopenias are common in patients presenting with liver failure. Causes include splenomegaly, immune cytopenia, viral infections and medications. In addition, cytopenia can be the result of a primary haematological diagnosis, which is associated with liver failure including haemangiolympthophagocytosis (HLH), aplastic anaemia, telomeropathy, lymphoma and myelodysplastic syndrome. A bone marrow biopsy (BMB) is the only investigation to discriminate the primary bone marrow disorder from secondary causes.

AIM

To evaluate the diagnostic utility of a BMB and its influence on patients management in the UK's largest liver unit

METHOD

We retrospectively collected clinical and pathological data on consecutive referrals to the haematology department for bone marrow biopsies in patients with liver failure between October 2012 to December 2018. Both paper and electronic patient records were used. Data were collected on a number of clinical, biochemical and pathological parameters.

RESULTS

108 BMBs were performed in 103 patients. 5 referrals which were repeated twice. The median age was 47.7 years (18-76 years) with 57 (55%) male patients. 43 (40%) patients had received a liver transplant.

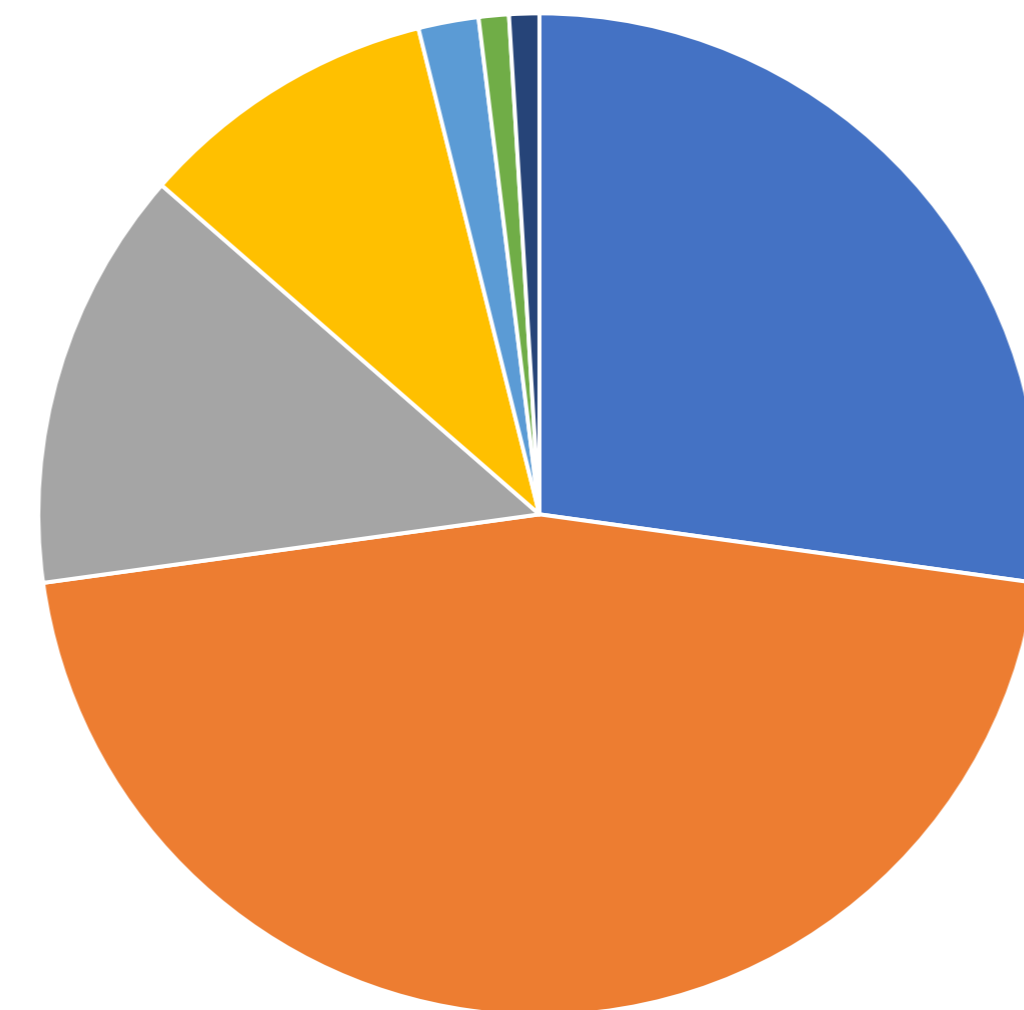
The patients who had repeat BMB were referred for possible HLH. The 2 patients were diagnosed with HLH and 1 patient was diagnosed with aplastic anaemia in repeat bone marrow biopsy and the initial BMBs were non-diagnostic. The other 2 patients were found to have HLH in both biopsies.

Although we did not diagnose PTL from the BMB, 8 (8%) patients subsequently received this diagnosis from another biopsy site.

Overall, 42 (41%) patients have died.

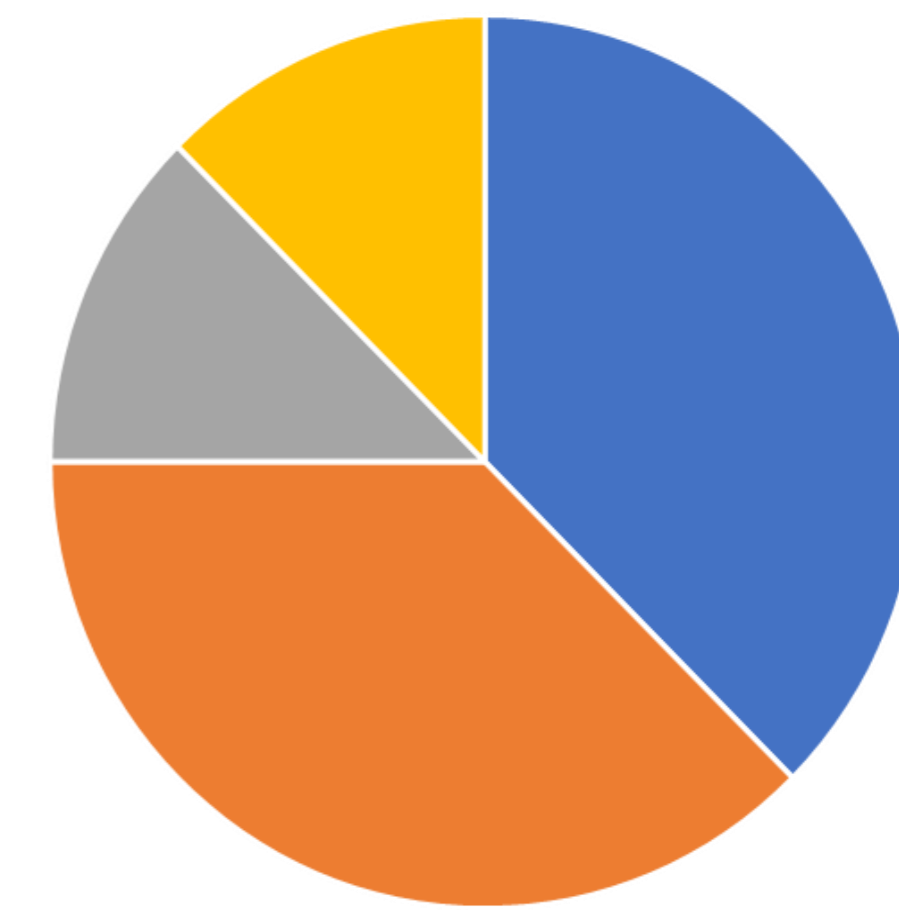
RESULTS

Indications for bone marrow biopsy



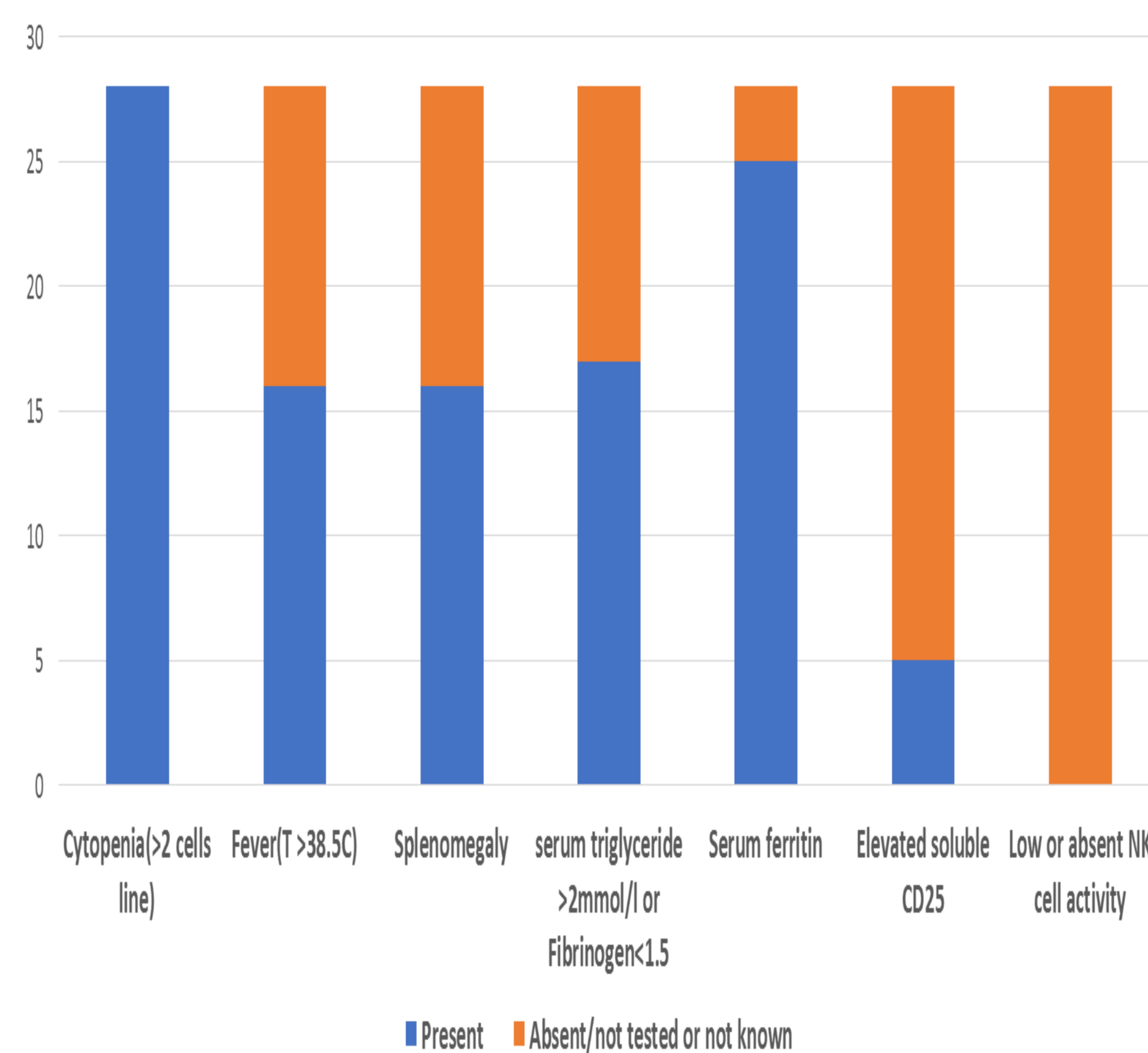
- HLH
- Unknown cause of cytopenia
- PTLD
- Possible MPN
- Possible Myeloma
- Possible Lymphoma
- Possible storage disorder

Potential triggers for HLH



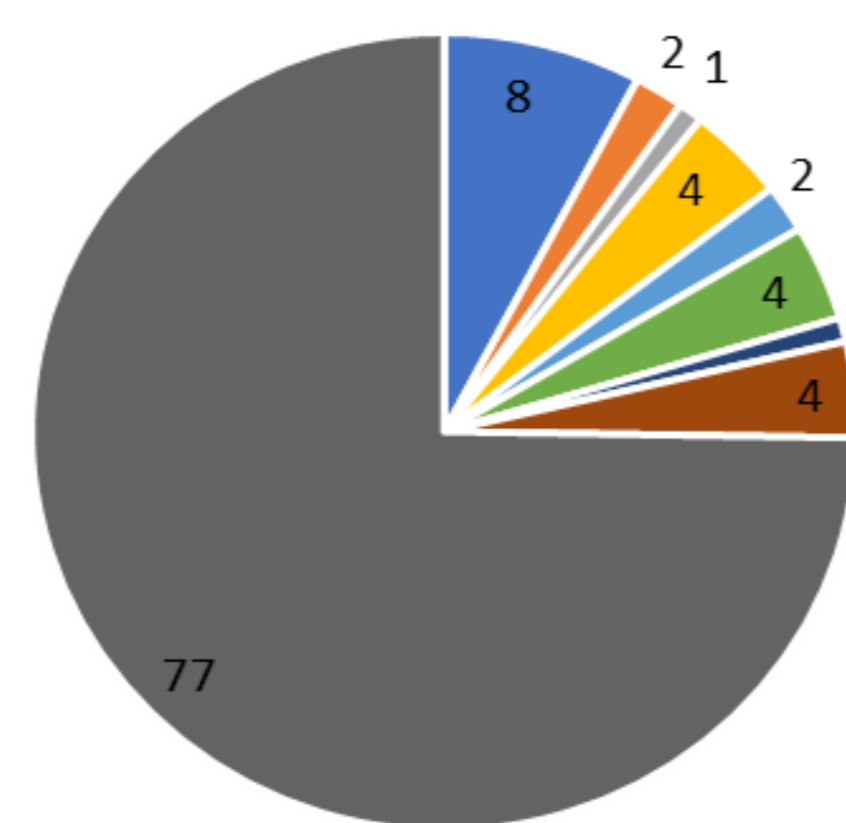
- CMV and EBV
- EBV viraemia alone
- EBV, HSV
- HHV8

HLH Referral Criteria



Diagnosis	Treatment	Outcome
HLH (N=8)	4(Ganciclovir, IV Ig, steroid, Rituximab, Etoposide)	2/8 alive
Aplastic anaemia (N=4)	1(ciclosporin and allergenic SCT), 1(awaiting SCT), 2(watch and wait)	4/4 alive
Hepato-splenic T cell lymphoma(N=2)	1(R-ICE), 1(died prior to chemo)	0/2 alive
Possible MDS(N=4)	1(supportive treatment),2(W&W), 1(died)	4/4 alive
MPN(N=4)	Hydroxycarbamide	4/4 alive
ITP(N=1), Telomeropathy (N=2)	Under surveillance	3/3 alive
TLGL(N=1)	Watch and wait	1/1 alive

FINAL DIAGNOSIS



- HLH
- TLGL
- Telomeropathy
- ITP
- Non-diagnostic
- Hepatosplenic T cell lymphoma
- Aplastic anaemia
- Possible MDS
- MPN

CONCLUSIONS

Although the majority of bone marrow biopsies (75%) did not reveal a diagnosis, a haematological/immunological diagnosis was made in 25% of referrals.

Therefore, a bone marrow biopsy remains an important investigation in patients with liver failure and cytopenias with a wide range of potential diagnoses that have implications for therapy.

REFERENCES

Development and Validation of the HScore, a Score for the Diagnosis of Reactive Hemophagocytic Syndrome
Laurence Fardet,1 Lionel Galicier,2 Olivier Lambotte,3 Christophe Marzac,4 Cedric Aumont,5 Doumit Chahwan,4 Paul Coppo,1 and Gilles Hejblum6

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