

# PATIENTS WITH PERSISTENTLY ABNORMAL LIVER BIOCHEMISTRY ARE UNDER-INVESTIGATED AND CAN BE RAPIDLY IDENTIFIED USING A NOVEL CASE-FINDING DATABASE

Almuthana Mohamed<sup>1</sup>, Christina Owen<sup>1</sup>, Sarah Gormley<sup>1</sup>, Waqas Khan<sup>1</sup>, Emma Wesley<sup>1</sup> and Timothy Jobson<sup>1</sup>

<sup>1</sup> Musgrove Park Hospital, Somerset NHS Foundation Trust, Somerset, UK

1

## Background and Aim

Chronic liver disease (CLD) continues to increase in prevalence. However, it remains underdiagnosed, with many patients missing opportunities for treatment. Guidelines state that patients with persistently abnormal liver chemistry should have a non-invasive liver screen (NILS) to identify potentially treatable causes of CLD. Unfortunately, in practice, these guidelines are often not followed. In Somerset, UK, we have developed a novel case-finding database currently with data on 560,000 individuals. We used this system to identify patients with persistently abnormal liver chemistry and to quantify the completeness of subsequent investigations.

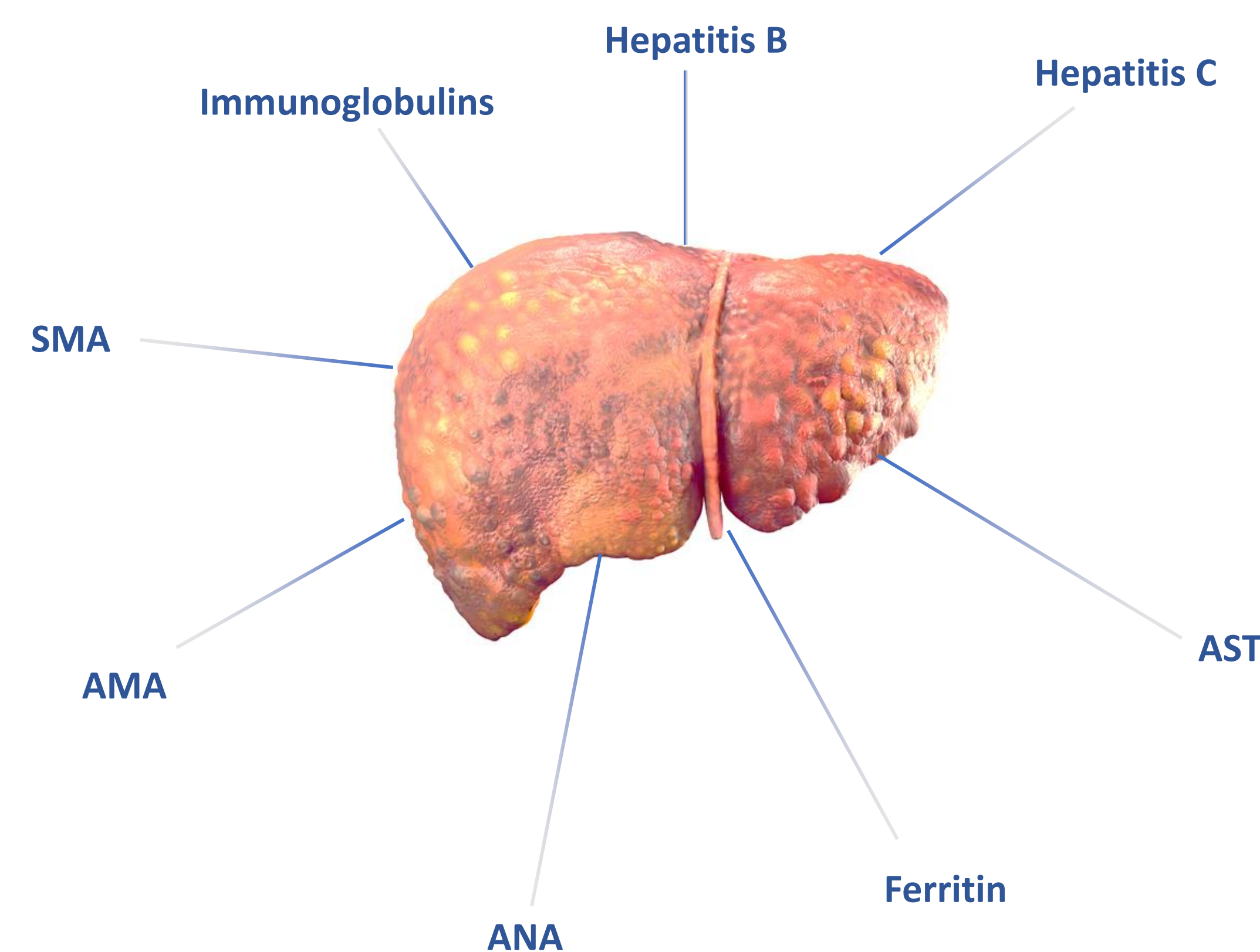


Figure 1: Basic Non-Invasive Liver Screen (NILS)

2

## Method

- Using data up to 31/12/2020, the case finding database was configured to identify patients between 30 and 75 with persistently abnormal liver chemistry (last ALT >40 IU/L and abnormal for at least the preceding 90 days)<sup>1</sup>.
- We further risk stratified the cohort to identify those with more concerning results (ALT>80; ALP>90; ALP>130; both ALT>80 and ALP>130).
- We determined the number of patients in each group with a complete 'basic' NILS (Figure 1).
- The screen was considered complete if these tests were found within a six-month period (based on ferritin date as the commonest test).
- We also assessed which age cohorts were more likely to have persistently abnormal liver chemistry and if there was any difference in age and the likelihood of having had the 'basic' NILS.

3

## Results

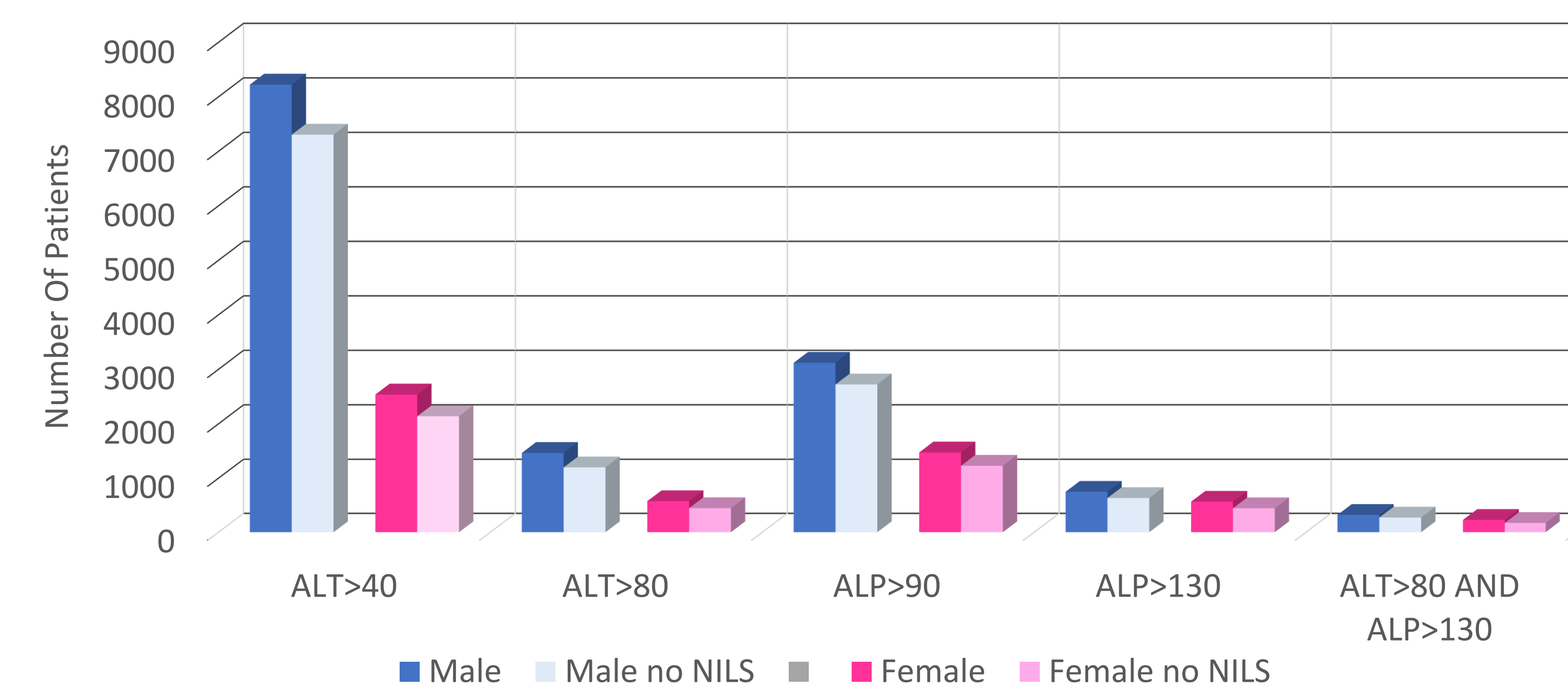
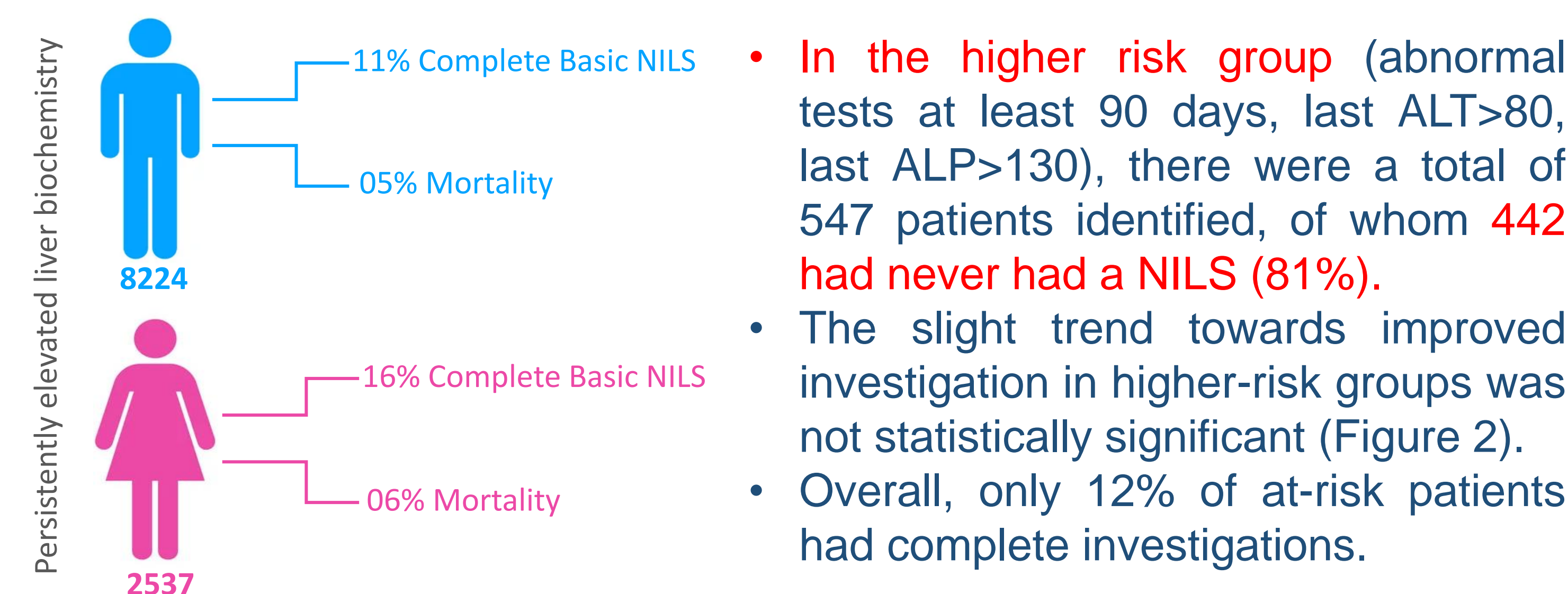


Figure 2: Patients with abnormal liver chemistry

4

## Conclusion

- Our data confirm that patients with persistently abnormal liver chemistry are infrequently investigated, with a high likelihood of missed opportunities for treatment.
- Our novel case-finding database can rapidly identify in seconds nearly 9000 individuals who would benefit from further investigation. Furthermore, the system can easily risk stratify these patients for more targeted interventions.
- Further work is underway to identify and investigate those needing specialist treatment.

5

## Acknowledgements

This project is funded by the NIHR [Invention for Innovation (NIHR200965)]. The views expressed are those of the author(s) and not necessarily those of the NIHR or the Department of Health and Social Care.

6

## Declarations

Dr Timothy Jobson is a director and shareholder of Predictive Health Intelligence Ltd, which designed the software and managed the project. All intellectual property developed from this project is owned within the public sector, UK. All other authors have no declarations to make.

7

## References

1-Wesley E, Matull WR, Kitchin A, Hutchison K, Madge S, Jobson T. A cumulative liver damage index (CLDI) identifies patients at risk of significant liver disease [abstract]. Gut. 2022 Sep 1;71. DOI: 10.1136/gutjnl-2022-BASL.6

8

## Contact information

AL Muthana Mohamed  
Gastroenterology and Hepatology Speciality Registrar  
Musgrove Park Hospital, Somerset NHS Foundation Trust  
Somerset, United Kingdom  
✉ [Almuthana.mohamed@somersetft.nhs.uk](mailto:Almuthana.mohamed@somersetft.nhs.uk)  
🌐 <https://www.linkedin.com/in/almumohamed/>

