

# End-stage liver disease in co-infection: management and outcomes

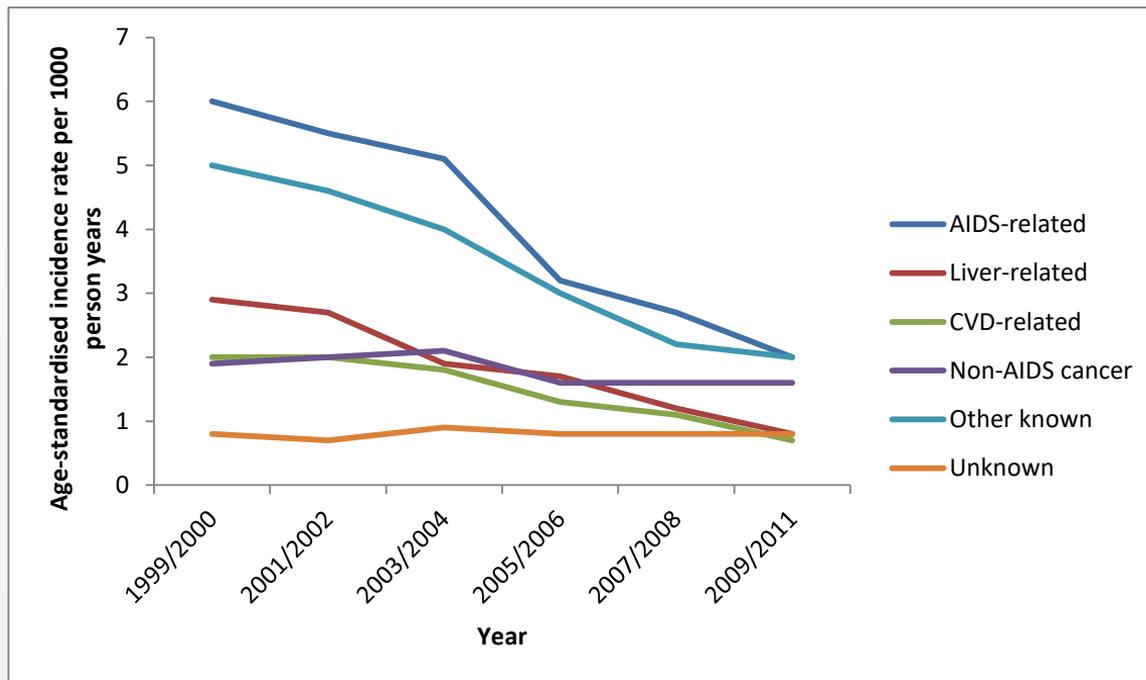
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# Time trends in causes of death in people with HIV



After AIDS-related deaths, non-AIDS cancer, liver disease and cardiovascular disease are the top 3 causes of death in people with HIV

Figure based on data from Smith C et al. Lancet 2014; 384:241-8.

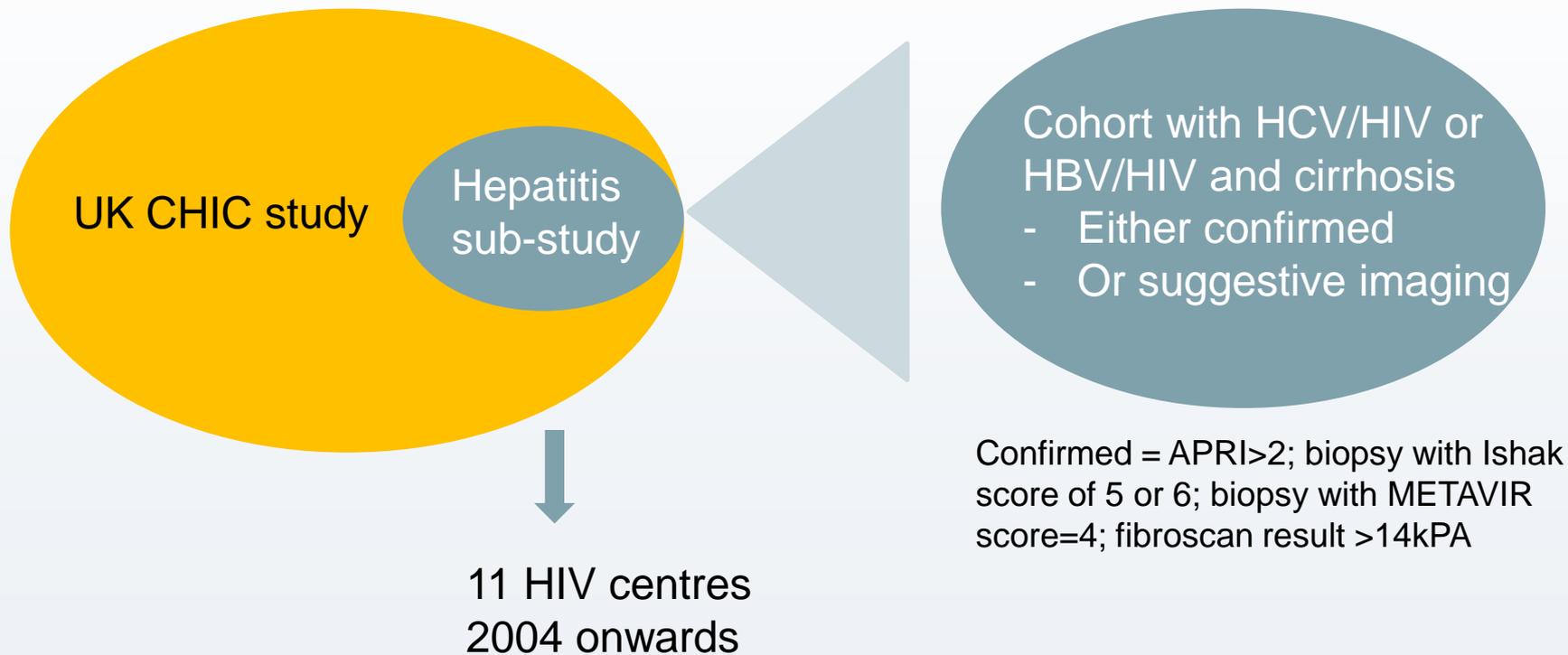
# Liver disease and management in HIV hepatitis co-infection

- Co-infection with HIV and viral hepatitis increases the rate of progression to cirrhosis, hepatocellular carcinoma and end-stage liver disease compared to either infection alone.
- Historically, liver transplantation was successful in HIV/HBV but had poor outcomes for people with HIV/HCV.
- Recent advances in hepatitis C treatments mean that liver transplantation may be an increasingly viable option for these patients.

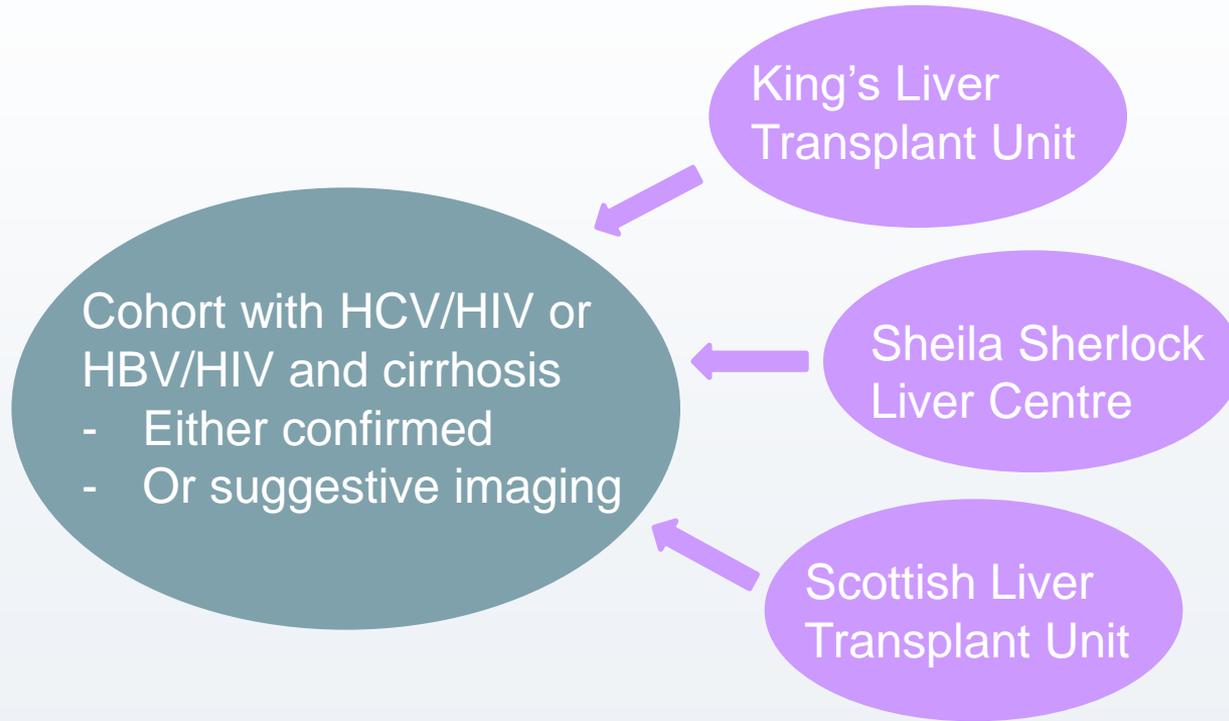
# Aims

- We aimed to describe the likelihood of referral for liver transplantation assessment in a cohort of people co-infected with HIV and hepatitis B or C with complications of cirrhosis using linked routine data from multiple UK centres.

# Methods to identify patients with cirrhosis



# Methods to enrich CHIC data on transplants



Data were collected on all patients referred for transplantation assessment with HIV/hepatitis over the relevant time period from 3 major liver transplant centres

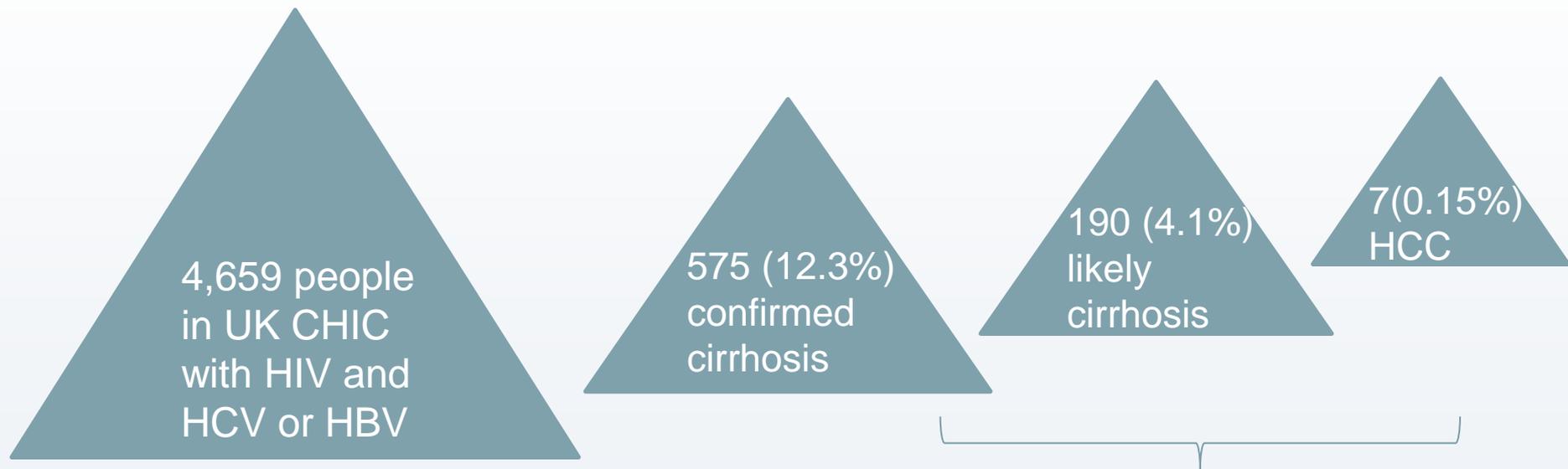
## Methods to link transplant and cirrhosis data

- A deterministic n-1 approach was used with the matching variables day of birth, month of birth, year of birth, gender, hepatitis B status and hepatitis C status, i.e. a match was considered true if at least 5 of these 6 variables matched.

15	15	HBV+	HBV+
Feb	Feb	HCV-	HCV-
1969	1968	M	M

Example n=5 match

# Results – description of participants

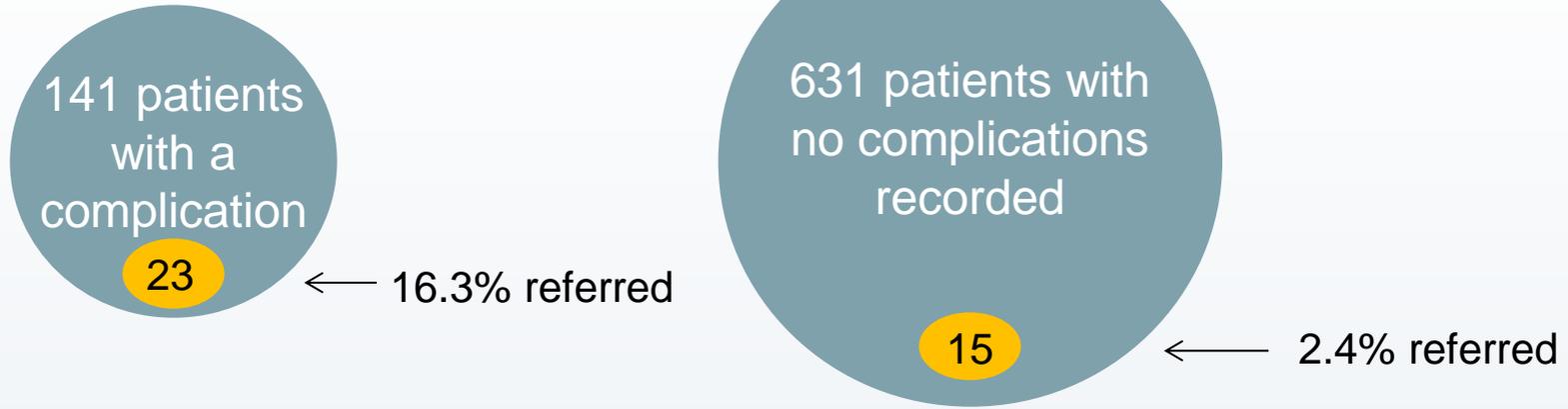


Total = 772, of whom 141 (18.3%) had at least one complication.  
 Median age at entry 44.6 years (IQR 40.1 to 49.3), 84% male

## Results – data linkage

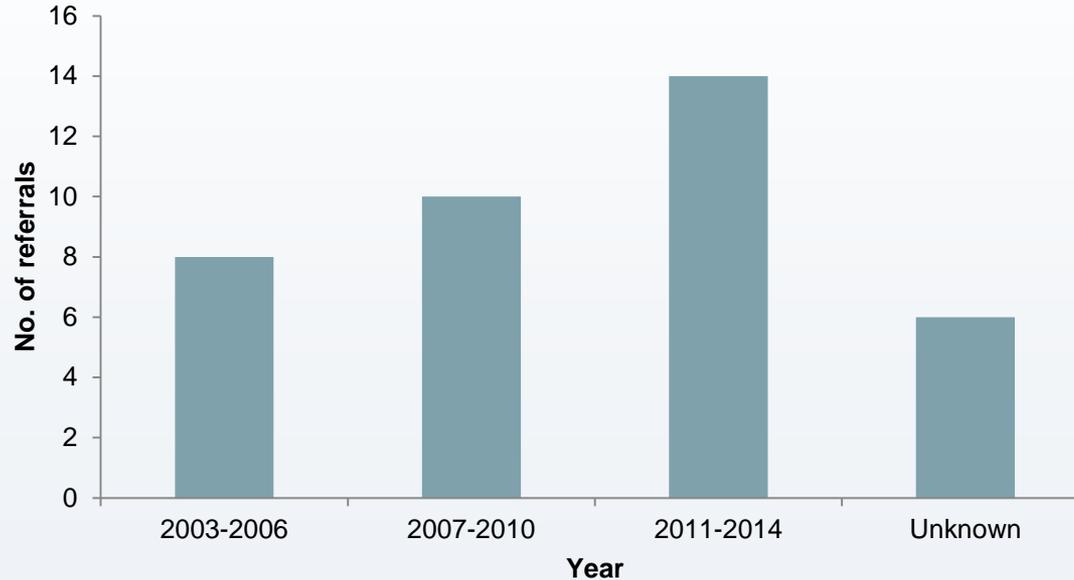
- A total of 48 records of assessments +/- transplants were collected from transplant units.
- Of these, 34 (70.8%) matched with CHIC data (14 matched on all 6 fields and 20 matched on 5 fields).

# Primary outcome: proportion referred for liver transplantation assessment



- Of the 38 patients assessed for transplant, the proportions did not differ significantly by gender ( $p=0.09$ ), age group ( $p=0.67$ ) or infection status ( $p=0.31$ ).

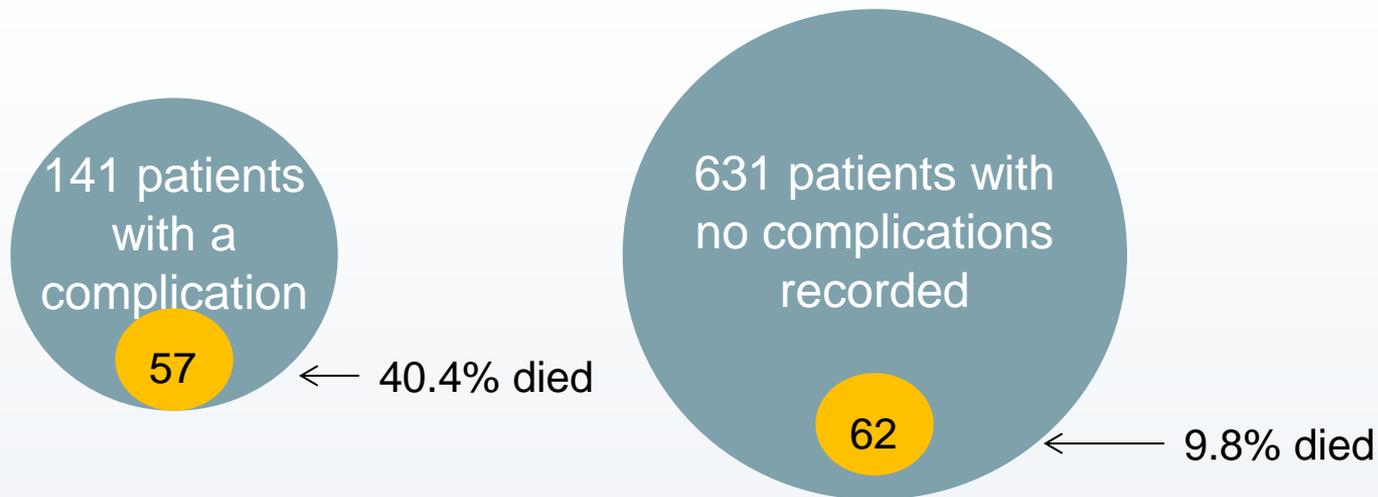
# Number of referrals over time



## Number of transplants

- Of 38 patients assessed, 25 had a record of receiving a liver transplant.
- For 20 of these individuals who had transplant unit data available, the median waiting time from date of referral for assessment to transplant was 6.7 months (IQR 4.5-11.2).
- While on the transplant waiting list, 25% had at least one episode of decompensation, 50% had no episodes, and no data on decompensation was recorded for the other 25%.

## Deaths



- Among patients with a transplant record, 42.9% died versus 0% without a complication; corresponding results for those with no transplant record were 40.2% versus 10%.

## Summary of findings

- A small proportion of co-infected patients with complications of cirrhosis are referred for and receive liver transplantation.

## Strengths and limitations

- We used a large HIV patient cohort with detailed long-term follow up on liver disease diagnosis & management.
- Data were enriched by transplant unit data from units covering similar geographical areas.
- We used a broad definition of cirrhosis to improve sensitivity, which reduced diagnostic specificity. Not all of the cohort would be eligible for transplant assessment.
- Decompensation events were incompletely recorded (but this would bias the proportion referred up rather than down).

## Conclusion

- This work emphasises the need to ensure that co-infected patients have the opportunity for early transplant assessment to facilitate optimal and timely management of their end-stage liver disease, especially in the context of the recent revolution in antiviral treatments for hepatitis C.

# Acknowledgements

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