

## Trends in Liver Cancer Incidence and Survival in Italy by Histologic Type, 2003–2017

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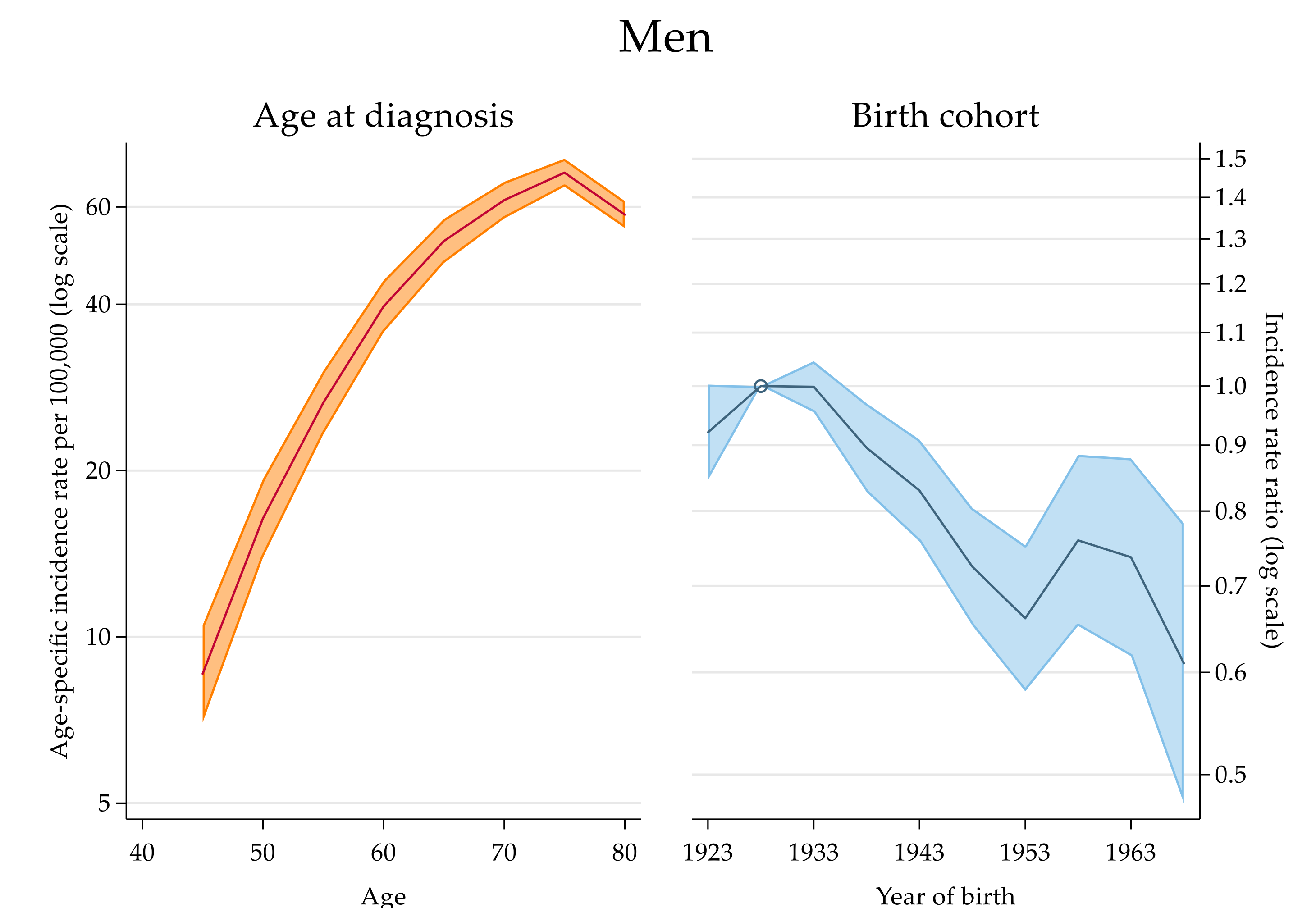
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**Background:** Liver cancer in Italy is characterised by one of the highest incidence rates worldwide outside of Asia coupled with comparatively favourable survival figures. This study evaluated the most recent epidemiologic trends of the disease.

**Methods:** Thirteen cancer registries covering a population of about 12,740,000 (21% of the national population) made available 35,574 cases registered in 2003-2017. Trends in age-standardised (Europe 2013) incidence rates were analysed with age-drift models. Trends in survival were analysed using 1-year, 2-year, 5-year and 10-year net survival (NS) and 5|1-year and 5|2-year conditional NS.

**Results:** Over the study period, the average annual incidence rates per 100,000 were 29.4 (men) and 9.4 (women) for total liver cancer; 14.6 and 3.5 for hepatocellular carcinoma (HCC); 1.8 and 1.1 for intrahepatic cholangiocarcinoma (ICC); and 13.0 and 4.8 for the 'other liver cancer types' group. Total liver cancer and HCC incidence decreased significantly for both sexes. For total liver cancer, the estimated average annual percent change was -1.6% among men and -2.1% among women. For HCC, the change was -1.3% among men and -2.7% among women. ICC followed an opposite trend. For men, the risk of HCC had two peaks, one in the birth cohorts of 1928 and 1933 and another, more moderate, in the cohort of 1958 (see **Figure**). Both sexes exhibited comparable improvements in early and mid-term conditional NS from HCC. In 2013–2017, 5-year NS was 28.9% (95% CI: 27.3%; 30.6%) for men and 30.1% (95% CI: 26.9%; 33.5%) for women. The uptrend in survival from ICC was less pronounced and was weakly significant, with a 5-year NS in 2013-2017 of 13.9% (95% CI: 10.8%; 17.3%) for men and 17.4% (95% CI: 13.5%; 21.7%) for women.

**Conclusions:** The opposite incidence trends of HCC and ICC confirm a pattern observed in other populations. The generalised, albeit slow, improvement in survival from HCC indicates a *trend towards earlier detection coupled with improvements in treatments*.



**Figure.** Age-specific incidence rate of hepatocellular carcinoma per 100,000 persons in the male population by age at diagnosis (panel at left) and incidence rate ratio by birth cohort (panel at right), as identified by the mid-year of birth (Italy, 2003–2017). The cohort of 1928, at highest risk, was the reference cohort. Incidence rate and rate ratio estimates (thick lines) and 95% confidence intervals (area around) are shown on a log scale

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