Chronic HBV related liver cancer burden in 0.5 million Chinese adults

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Background: China has the largest burden of chronic hepatitis B virus (HBV) infection in the world. Despite anti-viral treatment availability, there continues to be a high burden of HBV-related disease, with high rates of disease and death from liver cancer.

Methods: The China Kadoorie Biobank is a prospective cohort study of 0.5 million men and women aged 30-79 years recruited from ten diverse (5 rural and 5 urban) areas of China during 2004 to 2008, with hepatitis B surface antigen (HBsAg) measured at baseline. Over the 11-year follow-up period, the age-sex adjusted incidence rates per 100,000 PYAR and cumulative incidence of liver cancer by HBsAg carrier status were calculated. Multivariable adjusted Cox models were used to calculate risk of liver cancer associated with HBV, and the attributable fraction of liver cancer due to chronic HBV was calculated. Healthcare utilization was assessed by comparing the average number of hospital admissions for liver cancer by HBsAg status.

Results: HBsAg prevalence was 3.0%. The age-sex standardized incidence rate of liver cancer was 518 per 100,000 PYAR and 44 per 100,000 PYAR among HBsAg positive and negative people respectively. By age 70 years, 8.5% of HBsAg positive people developed liver cancer, compared to 0.6% of HBsAg negative people. The chronic HBV-related adjusted hazard ratio for liver cancer was 13.1 (95% CI 12.1–14.1). The fraction of incident liver cancer cases attributable to chronic HBV infection among HBsAg positive people was 92.4%, and the population attributable fraction was 24.0%. On average, among a cohort of 100 participants, by age 80 years, there were 30 hospitalizations for liver cancer among HBsAg positive people, compared to 2 for HBsAg negative people.

Conclusion: There remains a significant and largely preventable chronic-HBV related liver cancer burden in China, that requires urgent attention.

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