Impact of Healthcare Expenditure on HBV and HCV in Southern Western European countries in 2000-2019

3209

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BACKGROUND

Viral hepatitis remains a threat to public health and eradicating viral hepatitis by 2030 is a global health priority.

The Great Recession that hit Europe in 2008-2009 particularly affected Greece, Italy, Portugal and Spain, weakening their economic systems and worsening their deficits. As a result, a sovereign debt crisis was triggered, forcing their governments to implement austerity measures and increase tax revenues from 2010 onwards.

Consequently, health systems were severely affected by the crisis in those countries, with significant reductions in public health expenditure between 2009 and 2017 (between -7% and -4%)

This study was conducted to investigate the impact of the economic crisis that began in 2008 and which severely affected the Southern Western European (SWE) countries (Greece, Italy, Portugal, Spain), on the burden of HBV and HCV disease.

METHODS

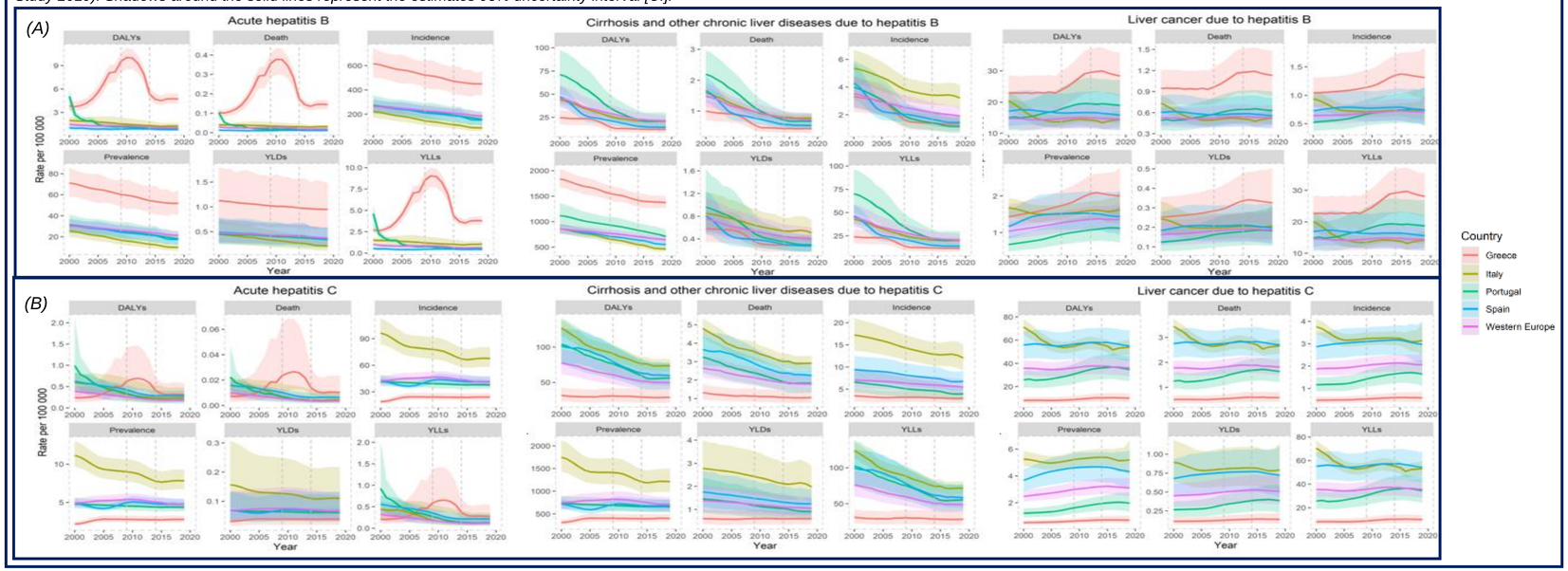
Time series modelling was performed to quantify the impact of healthcare expenditure, defined as a percentage of gross domestic product, on the trend of the epidemiological estimates for HBV and HCV over the period 2000-2019.

Estimates were retrieved from the Global Health Data Exchange of the Global Burden of Diseases 2019.

RESULTS

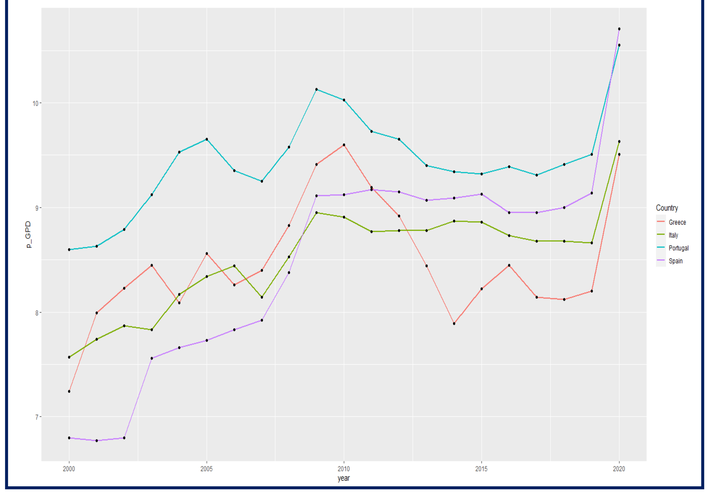
- Mortality rates due to HBV stabilized in SWE during the period 2000-2019. Declining trends in incidence and prevalence of acute HBV and chronic HBV were observed in SWE, although the pace of decline was slower in the period 2010-2019 (Figure 1).
- Acute HCV metrics and chronic HCV incidence and mortality showed a stable trend in SWE, whereas the prevalence of chronic HCV showed a fluctuating trend (Figure 1).
- Liver cancer due to both hepatitis infections showed a stagnating burden over time related to incidence and prevalence, although a general slight increase was observed for mortality, DALYs, YLL and YLD in WE and SWE (Figure 1).

Figure 1. Age-standardized rates of acute, cirrhosis and other chronic liver diseases and liver cancer due to HBV (A) and HCV (B) in Greece, Italy, Portugal, Spain and Western Europe from 2000 to 2019 (Global Burden of Disease Study 2019). Shadows around the solid lines represent the estimates 95% uncertainty interval [UI].



- An inverse association was observed between healthcare expenditure and both acute HBV and HCV infections, with results close to significance for acute HBV disability-adjusted life years (DALYs) [-2.54 (-5.09 – 0.01); p=0.05)] and years of life lost to premature mortality (YLLs) [-2.53 (-5.09 – 0.03); p=0.05)] in Greece. For acute HCV, the results showed that one unit (percentage) increase in healthcare expenditure was associated with a more beneficial effect on reducing incidence cases in Italy [-8.93 (-34.31 – 16.46); p=0.49], up to 80 times higher than in the other SWE countries.
- A similar inverse association between healthcare expenditure and cirrhosis and other chronic liver diseases (CCLD) metrics was found for both HBV and HCV, except for CCLD-HBV prevalence in Portugal and Spain.
- In addition, a positive but not significant association was found between healthcare expenditure and liver cancer metrics for both HBV (mainly for DALYs and YLLs in Greece) and HCV (mainly for DALYs and YLLs in Portugal and Spain).

Figure 2. Evolution over time of the percentage of expenditure



CONCLUSIONS

- Epidemiological indicators for HBV and HCV showed a slower pace of decline in the period 2010-2019, with a better improvement for HBV and a stabilization of mortality and liver cancer burden due to both hepatitis.
- The economic crisis of 2008 had a negative impact on the burden of hepatitis B and C.
- Elimination of HBV and HCV by 2030 will be a major challenge in the SWE countries.

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