The humanistic and economic burden of hepatitis C across the United States, Europe, and Asia

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Abstract

OBJECTIVES: Although prior studies have examined the burden of hepatitis C (HCV) within individual countries, no study has compared the burden across countries using a consistent methodology. The aim of this study was to quantify the burden of HCV in the United States (US), France, Germany, Italy, Spain, and Japan.

METHODS: The 2010 SEU (N=57,805), 2009 US (N=75,000), 2008/2009 Japan (N=37,683), and 2009/2010 urban China (N=33,261) waves of the National Health and Wellness Survey were used as the data source. Within each country, patients with a self-reported diagnosis of HCV were compared with those who did not report a diagnosis of HCV on sociodemographics, health behaviors, comorbidities, and health outcomes (health status using the SF-12v2, work productivity using the WPAI, and healthcare resource use in the past six months). The effect of HCV was examined using regression analysis applying sampling weights.

RESULTS: The prevalence of HCV ranged from 0.26% (China) to 2.4% (Italy). Patients in Japan (0.60 and 0.02 years, respectively) were the oldest, while patients in the US were the most likely to be obese (30.31%) and have concomitant anxiety (28.43%) and depression (26.65%) compared with other countries. Pooling countries and adjusting for sociodemographics, health behaviors, and comorbidities, HCV was associated with significantly lower physical component summary scores (t=3.32) and health utilities (t=0.04) and greater overall work impairment (t=4.76). Patients in Japan (N=13,912) and Germany (N=8,078) reported the highest number of hospital visits (t=5.00 and 2.51, respectively). The effects on health status were strongest in the US and UK while the effects on healthcare resource use were strongest in Japan.

CONCLUSIONS: HCV was associated with a significant humanistic and economic burden. These results suggest that the manifestation of the HCV burden, and the perception of the patients themselves, varied dramatically by country. Successful disease management should be geared towards region-specific unmet needs.

Introduction

The hepatitis C virus (HCV) is a chronic blood-borne disease, which is a leading cause of liver cirrhosis and hepatocellular carcinoma (HCC) globally.1

Several prior studies have examined the effects of HCV infection on the health status, work productivity, and healthcare resource use of patients across a number of countries.2-4

However, given the variability in the epidemiological history of HCV across regions, the characteristics and unmet needs of patients in different countries may be quite distinct.

Objective

The objective of this study was to use a consistent methodology to assess the characteristics and relative disease burden of patients diagnosed with HCV in the US, France, Germany, Italy, Spain, the UK, urban China, and Japan.

Methods

Data source

The current study used data from the 2010 SEU (N=57,805), 2009 US (N=75,000), 2008/2009 Japan (N=37,683), and 2009/2010 urban China (N=33,261) waves of the National Health and Wellness Survey (NHWS).

The NHWS is a population-based health survey of adults aged 18 and older.

The survey is a large Internet-based, though off-line, recruiting was conducted in areas/countries with poor internet penetration.

A random stratified sampling framework was implemented (with gender and age strata) to ensure the demographic composition of the NHWS is equivalent to each individual country’s population.

Measures and analysis

Within each country, patients who reported a diagnosis of HCV were compared with patients who did not report a diagnosis of HCV.

Using chi-square tests and t-tests for categorical and continuous outcomes, respectively, these two groups were compared on:

Demographics: age, marital status, annual household income, employment

Health behaviors: body mass index (BMI), smoking status, alcohol use, exercise behavior

Comorbidities: anxiety, depression, Charlson comorbidity index (CCI)

Survey regressions (controlling for age, gender, marital status, income, BMI, exercise, alcohol use, smoking behavior, and the CCI) were then conducted to compare the groups on:

Health outcomes: health status (SF-12v2), work productivity (WPAI questionnaire), and healthcare resource use (provider visits, emergency room visits, and hospitalizations)

All analyses applied sampling weights to project to the population.

Results

The prevalence of HCV diagnosis was as follows: US = 1.08%, France = 0.59%, Germany = 0.44%, UK = 0.35%, Italy = 1.42%, Spain = 0.82%, China = 0.26%, Japan = 0.75%.

Most patients reporting a HCV diagnosis were male (55% in Italy to 67% in Spain) except in France (only 36% were male; see Table 1).

Patients with an HCV diagnosis were oldest in Japan and Italy (62 and 61 years, respectively) and youngest in urban China (39 years).

Although patients with HCV in the UK were generally young (46 years), they had the greatest comorbidity burden (CCI = 2.56). Conversely, patients in HCV in Italy were among the oldest (61 years) yet had the least comorbidity burden (CCI = 0.81).

The majority of patients with HCV continue to consume alcohol (US: 57% to China: 81%) and many continue to smoke (Japan: 25% to Germany: 55%).

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