PREVALENCE OF HEPATITIS DELTA VIRUS IN THE UNITED STATES: RESULTS FROM AN ICD-10 REVIEW

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BACKGROUND
Hepatitis Delta virus (HDV) infection leads to the most aggressive form of human viral hepatitis. It only occurs as coinfection with chronic hepatitis B virus (HBV), and is associated with rapid progression of cirrhosis, early development of decompensation and hepatocellular carcinoma. Globally, an estimated 40% to 55% of HBV-positive patients will have HDV. A single-center study in Northern California identified 3.1% of HBV-positive patients had active HDV. Therefore, more accurate data is necessary to understand the footprint of this patient population and the potential impact of the HDV coinfection.

METHODS
We analyzed the International Classification of Diseases (ICD) 9 and 10 codes for patients with HBV/HDV coinfection in the Symphony Health Solutions'® Integrated Universe's PatientSource® database containing medical claims information for over 170 million de-identified patients in the US. The research was performed using Symphony Health Solutions'® Integrated Universe's PatientSource® database containing claims’ information for over 274 million patients, accounting for over 73% of all unique patients in the US. The database includes claims’ information for over 274 million patients, accounting for over 73% of all unique patients in the US. The dataset is from 2012 to 2016 and includes claims for medical evaluation and treatment of HDV.

RESULTS
1. Consistently growing Number of Newly Diagnosed HDV Patients in the US (Figure 1)
   - Prior to 2013 the annual number of patients diagnosed with HDV had been flat at ≈3500/year
   - 5079 patients were newly diagnosed with HDV in 2016, a 22% increase over 2015
   - Since 2013, the number of patients newly diagnosed with HDV increased from 4538 to 7442 (64% increase)

2. The Incidence of HDV Coinfection Among Chronic HBV Patients in the US Appears Markedly Higher than Previous Estimates (Figure 2)
   - The rate of HDV among patients with chronic HBV has more than doubled since 2013
   - In 2016, 15,000 unique patients were newly diagnosed with chronic HDV
   - Among those with chronic HBV, 6,613 (11.8%) newly diagnosed patients had chronic HDV
   - Only 4.7% of chronic HBV patients are tested for HDV coinfection

3. Low Rate of HDV Testing May Be Constraining True Rate of HDV Coinfection in the US (Figure 3)
   - Only 4,030 HBV patients (3.4%) were ordered for HDV tests in 2016
   - Of those, only 2,606 (65.1%) of HBV patients were newly diagnosed with HDV

4. HDV Geographic-Footprint is Growing (Figure 4-6)
   - 2016 (15,025) of all HDV patients in the US reside in 5 three digit zip codes (in descending order of patients): Brooklyn, NY, Corona, NY and Huntington Station, NY.

CONCLUSIONS
This real-world US-specific assessment of medical claims suggests that:
- More than 11.8% of patients with chronic HBV are coinfected with HDV
- Only 4.7% of chronic HBV patients are tested for HDV coinfection
- A small increase in HDV testing among chronic HBV patients has yielded significant increase in the number of detected HDV coinfection cases in the US
- Given the propensity for HDV to cluster geographically, it is important for clinicians to be aware of these growing footprints associated with the HDV patient population and the potential for underserved HDV areas
- These data support the need for increased HDV testing among chronic HBV patients
- HDV testing is readily available through commercial laboratories in the US

DISCLOSURES
Eduardo B Martins MD, DPhil, Jeffrey S Glenn MD, PhD
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