

# Population Adjusted Prevalence of Hepatitis Delta Virus in 21 Countries and Territories

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## Introduction

The hepatitis delta virus or HDV is a satellite RNA virus that requires the hepatitis B virus (HBV) for assembly and propagation.

Individuals that are co-infected with HDV will progress to advanced liver disease at a faster rate than those who are HBV mono-infected.

Recent studies have estimated the global prevalence of anti-HDV among those who are infected with HBV at 5-15%.<sup>1-3</sup>

## Aim

The aim of this study was to gain a better understanding of HDV prevalence at the population level in 21 different countries and territories.

## Method

In order to quantify HDV prevalence, a comprehensive literature review was conducted for both anti-HDV and HDV-RNA-positive prevalence for all the 21 countries and territories that are included within this analysis.

The availability of data depending on both the quality and quantity was combined with known risk factors and HDV drivers in each analyzed country and territory. This led to country/territory specific methods when estimating the overall HDV prevalence at a population level.

Multiple virtual meetings were held with HDV experts from each setting to discuss the literature review findings, collect unpublished data/reports and weight data for different patient segments along with regional heterogeneity in order to estimate the adjusted prevalence in the HBV-infected population.

The findings from these meetings were combined with The Polaris Observatory HBV data in order to accurately estimate the overall anti-HDV and HDV-RNA prevalence in each country and territory at the population level.

## Conclusions

The HDV prevalence that was discovered through this analysis was significantly lower than previously reported due to prior meta-analyses focusing on studies that were conducted in areas and among groups that have a higher probability of HDV positivity.

When the available data were weighted properly, the anti-HDV prevalence decreased by >50% in many of the countries analyzed.

Countries that utilize a national registry reported a higher prevalence because HDV tests are only carried out when there is suspicions of infection. This along with burden heavy biases in available studies, highlight the need for additional research in order to better understand the HDV disease burden in the total population, at the national level and at the global level.

The use of serosurveys does illuminate some insights into the burden, there is already a large population of individuals diagnosed with HBV, some who may be also be suffering from the quick progression of HDV.

There is a need to implement laboratory reflex testing in order to increase the knowledge surrounding HDV prevalence and to also capture HDV-RNA+ individuals earlier allowing for them to be linked to care at earlier disease progression states.

The overall burden of reflex testing would be limited as only HBV+ cases would be screened. Cost-effectiveness studies of such testing will be needed in East Asia where HBV prevalence is high and HDV prevalence is relatively low.

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## Results

*Table 1. Prevalence of HDV among the HBV+ Population in 21 countries/territories*

Country/Territory	2023 HBsAg+	Literature % anti-HDV+	Adjusted % anti-HDV+	% RNA +	Adjusted RNA+ HDV Prevalence	Adjusted RNA+ HDV Cases
Brazil	1,025,000	3.2%	1.7%	75.3%	1.3%	13,100
Canada	214,000	1.6%	4.4%	64.8%	2.9%	6,100
China, Mainland	78,548,000	1.2%	1.2%	66.6%	0.8%	627,800
Colombia	302,000	5.2%	1.0%	69.9%	0.7%	2,100
England	418,400	2.9%	1.0%	50.0%	0.5%	2,100
France	142,000	1.8%	3.5%	75.0%	2.7%	3,800
Germany	215,000	5.5%	3.0%	60.0%	1.8%	3,900
Hong Kong	332,000	0.2%	0.2%	60.0%	0.1%	300
Israel	129,000	6.5%	6.8%	60.0%	4.1%	5,300
Italy	301,600	8.3%	3.4%	60.5%	2.0%	6,200
Japan	926,000	8.5%	0.5%	40.8%	0.2%	1,900
Korea, Republic of	1,360,000	0.3%	0.3%	54.0%	0.2%	2,200
Mexico	116,000	2.4%	0.2%	69.9%	0.2%	200
Portugal	110,000	12.6%	1.5%	72.9%	1.1%	1,200
Romania	568,000	23.1%	2.9%	80.0%	2.3%	13,200
Saudi Arabia	570,000	8.6%	4.0%	60.0%	2.4%	13,700
Spain	208,000	5.2%	2.3%	72.9%	1.7%	3,500
Sweden	31,000	3.8%	2.0%	75.0%	1.6%	500
Taiwan	1,864,000	3.3%	0.9%	60.0%	0.5%	10,100
Turkey	1,962,000	2.8%	2.8%	68.0%	1.9%	37,300
USA	1,650,000	6.0%	3.0%	66.0%	2.0%	32,700
<b>Total</b>	<b>90,992,400</b>	<b>1.7%</b>	<b>1.3%</b>	<b>66.5%</b>	<b>0.9%</b>	<b>787,200</b>

- The literature review resulted in an HBsAg infection population level weighted anti-HDV prevalence of 1.7% (Table 1).
- Data was collected and analyzed for each of the 21 countries/territories based not only on available data but also on the specificities of HDV within their borders.
- Adjusting for geographical distribution, disease stage and special populations resulted in an anti-HDV prevalence of 1.3% among the HBsAg+ population.
- The highest anti-HDV after adjustment was found in Israel at 6.8% (Table 1).
- After adjustment for the HBV+ population and HDV-RNA+, China had the highest absolute number of HDV-RNA+ cases.

## References

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