



# Prevalence of Vitamin D Deficiency in Patients with Chronic Viral Hepatitis

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## Introduction

- Patients with cirrhosis are at increased risk for osteoporosis, with rates of 20-53% reported for those with cirrhosis of viral etiology<sup>1-3</sup>
- Although hepatic dysfunction might increase risk because of the liver's functional role in converting vitamin D3 to 25-hydroxy-vitamin D (25[OH]D), patients rarely manifest evidence of bone loss unless they have concomitant nutritional vitamin D deficiency<sup>4</sup>

## Purpose

- To determine the prevalence of vitamin D deficiency in patients with chronic hepatitis B (CHB) and chronic hepatitis C (CHC), with and without cirrhosis
- To study provider patterns of evaluation for vitamin D deficiency in patients with chronic viral hepatitis

## Methods

- Review of the electronic medical records database at an academic faculty hepatology practice
- Exclusion criteria: chronic kidney disease, celiac disease, inflammatory bowel disease, cholestatic liver disease, gastric bypass
- vitamin D *deficiency* = 25[OH]D <20 ng/mL
- vitamin D *insufficiency* = 25[OH]D <30 but ≥20 ng/mL

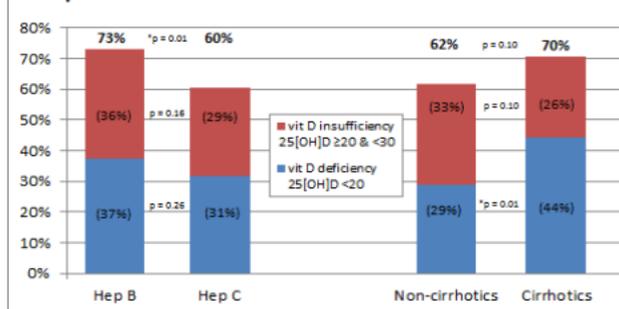
## References

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## Prevalence of Vitamin D Deficiency & Insufficiency

	n	vit D deficiency 25[OH]D <20	vit D insufficiency 25[OH]D ≥20 & <30	normal 25[OH]D ≥30	mean levels 25[OH]D [ng/mL]
CHB	123	37%	36%	27%	23.75
CHC	272	31%	29%	40%	27.89
non-cirrhotics	280	29%	33%	38%	27.48
cirrhotics	115	44%	26%	30%	24.47
All patients	395	33%	31%	36%	26.60

## Proportion of Patients with Vitamin D Levels Below Normal



## Results

2312 patients with chronic hepatitis B and C seen between January 2007 and October 2009 were identified:

- Only 17% of patients (n = 395) had vitamin D levels checked
- 64% of patients had 25[OH]D levels <30 ng/mL (mean 26.6 ng/mL)
  - 31% patients (122/395) had vitamin D *insufficiency*
  - 33% patients (132/395) had vitamin D *deficiency*
- Prevalence of vitamin D *insufficiency* was similar in cirrhotic and non-cirrhotic patients (33% vs. 26%, p = 0.10) but vitamin D *deficiency* was more prevalent in cirrhotics (44% vs. 29% in non-cirrhotics, p = 0.01)
- Prevalence of vitamin D *insufficiency* was higher in patients with CHB than CHC (73% vs. 60%, p = 0.01)

## Conclusions

- Almost 2/3 of patients with chronic viral hepatitis had abnormal vitamin D levels; 1/3 had vitamin D *deficiency*
- Vitamin D *deficiency* was more common in those with cirrhosis
- Patients with chronic hepatitis B more commonly had decreased vitamin D levels than patients with chronic hepatitis C
- Only a minority of patients (less than 20%) had vitamin D levels monitored routinely
- These findings highlight the importance of routine monitoring of vitamin D levels and vitamin D replacement in this population

## Financial Disclosures

Dr. Ira Jacobson has consulted for Gilead Sciences Inc, Bristol-Myers Squibb, Novartis Pharmaceuticals, Globelimmune, Schering-Plough, Pharmasset Inc, ZymoGenetics Inc, Vertex Pharmaceuticals, Human Genome Sciences, Merck & Co, Boehringer Ingelheim, Tibotec, Abbott Laboratories, Roche Pharma, AG, Anadys, Progenics, Schering-Plough Corp, Valeant Pharmaceuticals.  
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