

# Evaluation of Heparin-Induced Thrombocytopenia Before and During the COVID-19 Pandemic at a US National Reference Laboratory

## Background

- Heparin-induced thrombocytopenia (HIT) is a potentially life-threatening complication that can occur after exposure to the anticoagulant heparin.<sup>1</sup>
- COVID-19–associated coagulopathy is considered a prothrombotic state that requires thromboprophylaxis with low-molecular-weight heparin (LMWH) or unfractionated heparin (UFH).<sup>2</sup>
- **Objective:** Investigators compared HIT testing results before and during the pandemic to determine if possible higher exposure to heparins during the pandemic led to a higher occurrence of HIT.

## Methods

- The retrospective analysis included deidentified test results of patient specimens submitted for HIT testing at Quest Diagnostics during February through December of 2019 and 2020.
- Laboratory testing for HIT was performed using enzyme-linked immunosorbent assay (ELISA) or a serotonin release assay (SRA) for LMWH or UFH.
  - A positive result for HIT IgG ELISA was an optical density >0.300.
  - A positive for SRA was ≥20% serotonin release at low heparin concentration with >50% reduction at high heparin concentration.
- Monthly HIT testing and positivity rates were compared for 2019 and 2020.

## Results

- HIT median monthly positivity rates were lower in 2020 than in 2019 for ELISA testing but were not significantly different in 2020 and 2019 for SRA testing:
  - IgG ELISA: 17.6% vs 14.9%,  $P=0.0048$
  - LMWH SRA: 12.9% vs 13.5%,  $P=0.1499$
  - UFH SRA: 8.1% vs 8.8%,  $P=0.8415$
- HIT testing volume was higher in 2020 than 2019 for all 3 assays:
  - IgG ELISA: 56.1% higher
  - LMWH SRA: 16.7% higher
  - UFH SRA: 11.2% higher

## Conclusions

- Positivity rates for HIT testing do not indicate increased risk of HIT during the pandemic.
- Testing volume was higher during the pandemic, which could indicate higher exposure to heparin or higher clinical suspicion of HIT. Further studies are required to determine the reason for increased testing.

## Poster presentation at the International Society on Thrombosis and Haemostasis Virtual Congress

### Authors

Edward CC Wong,<sup>1</sup> Laura Worfolk,<sup>1</sup> Lina Noh,<sup>1</sup> William Wu,<sup>1</sup> Mervyn Sahud,<sup>2</sup> Fred Racke,<sup>2</sup> Jeffrey S Dlott<sup>2</sup>

### Affiliations

<sup>1</sup>Quest Diagnostics Nichols Institute, Chantilly, VA, USA

<sup>2</sup>Quest Diagnostics Nichols Institute, San Juan Capistrano, CA, USA

### International Society on Thrombosis and Haemostasis Virtual Congress, July 17-21, 2021

**Date:** July 17

**Time:** 4:00 PM - 5:00 PM

### Webpage

<https://abstracts.isth.org/abstract/evaluation-of-heparin-induced-thrombocytopenia-before-and-during-the-covid-19-pandemic-at-a-us-national-reference-laboratory>

### References

1. Arepally GM, Padmanabhan A. Heparin-induced thrombocytopenia: a focus on thrombosis. *Arterioscler Thromb Vasc Biol.* 2021;41:141-152. doi: 10.1161/ATVBAHA.120.315445
2. Moores LK, Tritschler T, Brosnahan S, et al. Prevention, diagnosis, and treatment of VTE in patients with coronavirus disease 2019: CHEST guideline and expert panel report. *Chest.* 2020;158:1143-1163. doi:10.1016/j.chest.2020.05.559