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BACKGROUND

- Heparin-induced thrombocytopenia (HIT) is an adverse drug reaction characterized by thrombocytopenia and a high risk for thrombosis in patients with heparin exposure.
- The “4 T’s” are a clinical scoring system that can be used for estimating the probability of HIT based on its characteristic features: Thrombocytopenia, Timing, Thrombosis, and the absence of oTher explanation(s).
- Previous studies suggest low probability (< 5%) for heparin antibodies with a score ≤ 3 , and high probability (>80%) with a score ≥ 6 . A score of 4 or 5 indicates a clinical profile compatible with HIT but with another plausible explanation (intermediate).
- In November 2019, our institution implemented a pharmacist-driven 4T score calculation to streamline heparin antibody testing. When a provider orders a Heparin Antibody (HIT Assay) Panel, a consult to the pharmacy to calculate a 4T score is required within the electronic health record (EHR).
- If the pharmacist calculates a score ≤ 3 , the provider is called with the recommendation to cancel the lab test. If the pharmacist calculates a score ≥ 4 , the pharmacist sends the order to the lab.

OBJECTIVE

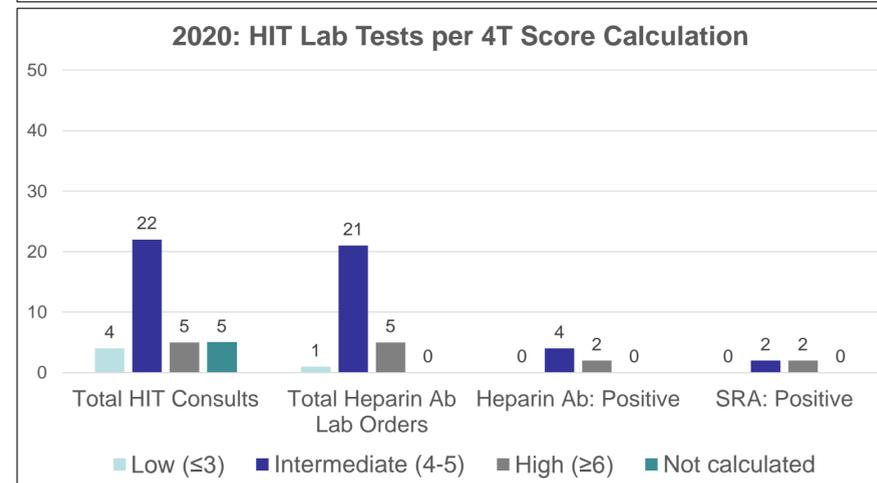
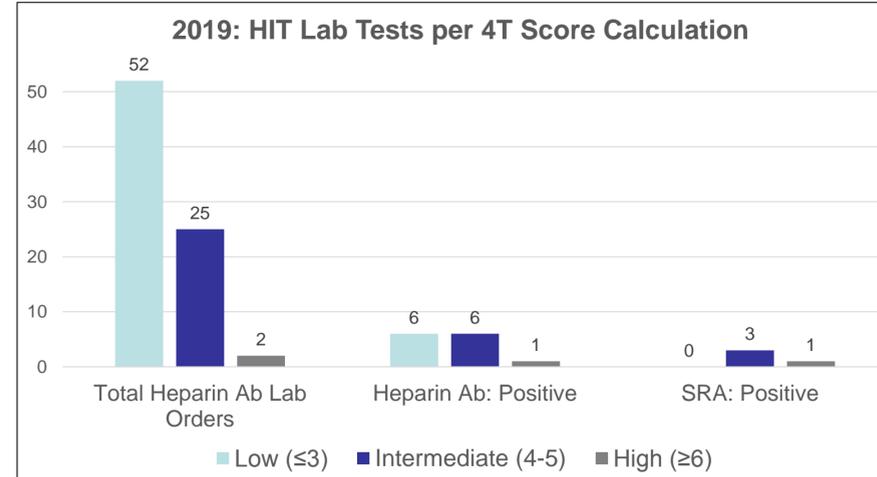
- To determine if pharmacist calculation of the 4T score for patients with suspected HIT will result in decreased heparin antibody tests performed

METHODS

- Single center, retrospective review
- Data collected from March through August 2020 was compared to data previously collected from March through August 2019 (prior to the initiation of the pharmacist-driven 4T score calculation)
- Inclusion criteria: patients admitted to CHI Memorial with orders for a Heparin Antibody (HIT Assay) Panel
- Exclusion criteria: orders for a Heparin Antibody (HIT Assay) Panel in error
- Primary outcome: number of heparin antibody (Ab) tests performed
- Additional data evaluated includes calculated 4T score, heparin antibody test results, Serotonin Release Assay (SRA) results, and pharmacist interventions

RESULTS

	2019	2020
Total Heparin Antibody (Ab) Panel Orders	N/A	42
Orders Included in Study, n	N/A	36
Total Heparin Ab Lab Orders	79	27
Positive, n (%)	13 (16.5%)	6 (22.2%)
Negative, n (%)	66 (83.5%)	21 (77.8%)
Total SRA Lab Orders	13	6
Positive, n (%)	4 (30.8%)	4 (66.7%)
Negative, n (%)	9 (69.2%)	2 (33.3%)



RESULTS (cont.)

Pharmacist Interventions (2020)	
Total Pharmacist Interventions	13
Recommend d/c Heparin Ab lab order (prior to 4T score calculation)	5
Recommend alternate anticoagulation while waiting for HIT results	4
Recommend d/c HIT treatment following negative Heparin Ab test	2
Recommend HIT Panel	2

DISCUSSION

- 66% (52/79) of the calculated 4T scores from the 2019 data were ≤ 3 , indicating low probability of HIT. These lab tests likely could have been prevented had a 4T score been calculated beforehand.
- 25% (9/36) of the Heparin Ab Panel orders did not go on to lab in the 2020 group, indicating pharmacists played a role in decreasing heparin antibody tests being performed in patients unlikely to have HIT.
- There is still room for improvement, as 78% of the orders sent to lab in the 2020 group resulted in negative heparin antibody tests. One potential improvement would be to adjust the 4T score calculation in patients who recently had surgery, as this would likely not be HIT.
- Limitations of this study that may contribute to decreased panel orders in 2020 compared to lab orders in 2019 include the global SARS-CoV-2 pandemic which caused decreased hospital census during 2020. Additionally, since implementing this process, provider education on the 4T score may have prevented some providers from ordering a Heparin Antibody Panel if they realize HIT is unlikely.
- An additional limitation is that our institution changed EHRs in November 2019, preventing additional data collection within the 2019 group outside of what was previously collected.
- Future directions include evaluating costs savings due to pharmacist interventions that could have resulted in decreased length of stay and decreased inpatient drug costs for HIT treatment with IV direct thrombin inhibitors.

REFERENCES

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- Warkentin TE. Heparin-induced thrombocytopenia: diagnosis and management. *Circulation.* 2004;110:e454-e458

DISCLOSURE PANEL

- The authors of this presentation have the following information regarding possible financial or personal relationships with commercial entities that have a direct or indirect interest in the subject matter of this presentation to disclose:
- Andrea Wilkinson: Nothing to disclose
 - Rachel Kile: Nothing to disclose