Lab Value Activity

Mark A. Zaydman¹

¹Department of Pathology and Immunology, Division of Laboratory and Genomic medicine, Washington University in St. Louis, School of Medicine, St. Louis, MO

Introduction

Heparin induced thrombocytopenia (HIT) is a rare complication of exposure to the anticoagulant drug heparin. Patients with HIT are at a high risk for potentially devastating arterial or venous thrombosis. This risk can be reduced by withdrawing heparin medications and initiating and alternative anticoagulant, such as a direct thrombin inhibitor. However, these treatments are costly, require IV access, and carry a risk of major bleeding complications.

The PF4 Ab assay that detects antibodies against heparin/PF4 complexes such those that cause HIT. This test has high sensitivity, but limited specificity due to the detection of other non-pathogenic antibodies. In this activity you will consider if and when the PF4 Ab test provides value.

Part 1: Accuracy of the PF4 Ab screen

Here are the results of a hypothetical case control study:

HIT	PF4 Ab OD >0.4	PF4 Ab OD <= 0.4		
Diseased	194	6		
Healthy	26	174		

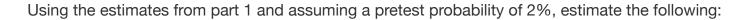
From these data:

1. Estimate the sensitivity and specificity

2. Estimate the LR+ and LR-

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Part 2: PF4 Ab value in a low pretest probability patient



- 1. PPV and NPV
- 2. Post-test probability

Did the PF4 Ab result provide value for this patient?

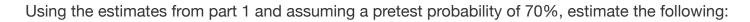
Part 3: PF4 Ab value in an intermediate pretest probability patient

Using the estimates from part 1 and assuming a pretest probability of 10%, estimate the following:

- 1. PPV and NPV
- 2. Post-test probability

Did the	PF4 Ab	result	provide	value	for this	patient?

Part 4: PF4 Ab value in an high pretest probability patient



1. PPV and NPV

2. Post-test probability

Did the PF4 Ab result provide value for this patient?