"Wobblers" – Variability in QuantiFeron Gold In-Tube Test Results: *Not as Variable as they Seem*

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Background

The Palo Alto Veterans Hospital ran QuantiFeron Gold In-tube (QFT-GIT) tests on 810 health care workers in two consecutive years for the detection of latent tuberculosis infection.

Because our workforce demonstrates a high background incidence of latent tuberculosis infection, such testing is performed every year irrespective of initial test result. Some employees were noted to have discordant, or "wobbling" test results between the different testing years.

Methods

A retrospective results review was performed on serial test results and on all results which "wobbled" between positive and negative during 2009 and 2010.

The TBag-nil level was recorded for these employees and plotted to determine possible predictive value of the TBag-nil levels.

Results

635 employees' tests were positive (>0.35 µg/ml) (Chart 1). 58 (7.2%) of 810 serially tested employees had discordant results between years, either initially "positive" and subsequently "negative" or the reverse. 48 (83%) of the "wobblers" had TBag-nil levels of <1.0 µg/ml (on a scale of 1 to approximately 15).

22 (38%) had TBag-nil levels <0.51 µg/ml; 26 (45%) had TBag-nil levels between 0.51 and 1.0 µg/ml; and 10 (17%) had levels >1.01 µg/ml.

Chart 1.

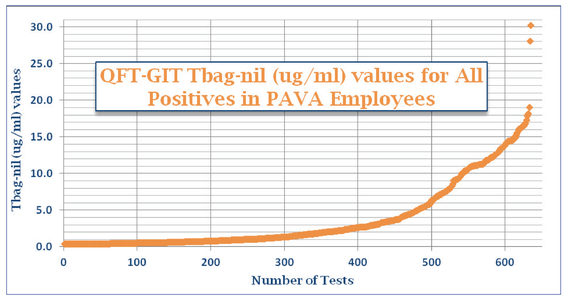
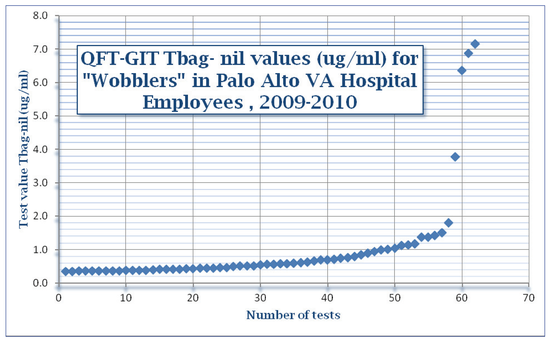


Chart 2.



Conclusion

The IGRAs are giving clinicians an opportunity to determine latent tuberculosis infection with at least 92% confidence. There is a population of individuals whose TBag-nil levels hover near the cutoff point of 0.35 µg/ml, with 83% of our "wobblers" having a level <1.0 µg/ml (Chart 2). It is these individuals whose result may drop above or below this cutoff in serial testing, causing apparently discordant results. Such transient, minor, fluctuations in the TBag-nil levels could reflect test/reagent variability or biologic variability or both. Per CDC guidelines, the QFT-GIT quantitative results should be released to the provider so that an informed decision can be made regarding retesting versus treatment options.

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