

ABSTRACTS

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EVALUATION OF THE DIESSE CHORUS AND BIOMERIEUX MINIVIDAS VARICELLA IgG ASSAYS

Wieringa M¹, Panayotou T¹, and Hamblin J¹

¹Department of Microbiology, Monash Medical Centre
Southern Cross Pathology Australia

Introduction: Varicella zoster virus (VZV) IgG serology testing is commonly requested in diagnostic pathology and is especially important for staff screening and potential exposure during pregnancy. Microtitre enzyme immunoassay (EIA) based tests, commonly used in Australia, are usually batch tested resulting in turnaround times being less than desirable. In addition, testing can also take several hours to produce results.

The Diesse Chorus (distributed by Laboratory Diagnostics) and the bioMerieux miniVIDAS both provide automated qualitative assays for the detection of IgG antibodies to VZV in serum. Testing samples by both the Chorus and the miniVIDAS can be performed easily on a daily basis. Total time required for test preparation and assay duration is significantly less than that of microtitre EIA with minimal calibration and controls required due to the use of separate, self-contained, disposable testing strips.

Methods: A total of 143 serum samples that had been previously tested with the Dade Behring Enzygnost VZV IgG EIA assay on the BIO-RAD EVOLIS automated platform were selected to test with the Diesse Chorus and the bioMerieux miniVIDAS VZV IgG assays. Of the 143 specimens, 37 were part of a staff screening program, 64 were routine screens for either antenatal or reproductive investigations, 5 were from patients that had either symptoms or exposure and 37 were from post chemotherapy, renal patient screens or a variety of other conditions. An overall consensus result was determined for each of the specimens, allowing the sensitivity and specificity to be compared for each of the three assays. A specimen was categorised as positive or negative by achieving the same result from all three assays. Any specimen results that did not correspond to the majority were repeated by the discrepant method and by the Becton Dickinson VZV scan total antibody latex agglutination test. Consensus for these specimens was achieved if three out of the four methods provided the same result. Precision testing was also performed on both the Diesse Chorus and the bioMerieux miniVIDAS by repeat testing of a patient serum with known low reactivity. A commercially available quality control sample was also tested with a number of runs for both methods.

Results: The sensitivity of the Chorus VZV IgG (n=82) was estimated to be 100%, with a confidence interval (CI) of 94-100% and the specificity (n=56) estimated to be 100% (CI: 92-100%).

The sensitivity of the bioMerieux miniVIDAS (n=76) was estimated to be 93% (CI: 84-97%) and the specificity (n=56) estimated to be 100% (CI: 92-100%).

The sensitivity of the Dade Behring Evolis (n=82) was estimated to be 100% (CI: 94-100%) and the specificity (n=54) estimated to be 96.4% (CI: 87-99%).

The precision measured as a coefficient of variation (CV) for the Diesse Chorus VZV IgG assay was calculated using a low patient sample (n=13) to be 10.3%.

The precision measured as a coefficient of variation (CV) for the miniVIDAS VZV IgG immunoassays was calculated using a low patient sample (n=15) to be 8.7%.

Discussion: The results of the study show that both the Chorus and miniVIDAS each had sensitivities greater than 92% and a precision which is acceptable for routine diagnostic VZV IgG screening. Both the Chorus and miniVIDAS offer the advantages of automation and improved turn around times. In addition, the Chorus also includes VZV IgM in the test menu.