

March 17, 2010

MEMORANDUM

TO: All physicians ordering immunosuppressant drug levels

FROM: James H. Nichols, Ph.D., DABCC, FACB
Medical Director, Clinical Chemistry

RE: Conversion to Mass Spectrometry

Due to Abbott Laboratories discontinuation of support for the IMx and TDx/FLx immunoassay analyzers, Baystate Reference Laboratories (BRL) will be converting immunosuppressant tests to an HPLC Mass Spectrometry method. Because mass spectrometry has longer analytical times than immunoassays, the cutoff for receipt of samples will change to 10:30 AM! Samples received in the laboratory by 10:30AM will be resultd the same day, while those received after the 10:30AM cutoff will be reported with the next day's samples.

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On May 4, 2010, tacrolimus will be the first assay to move to the mass spectrometer followed by rapamycin and cyclosporine over the next several weeks.

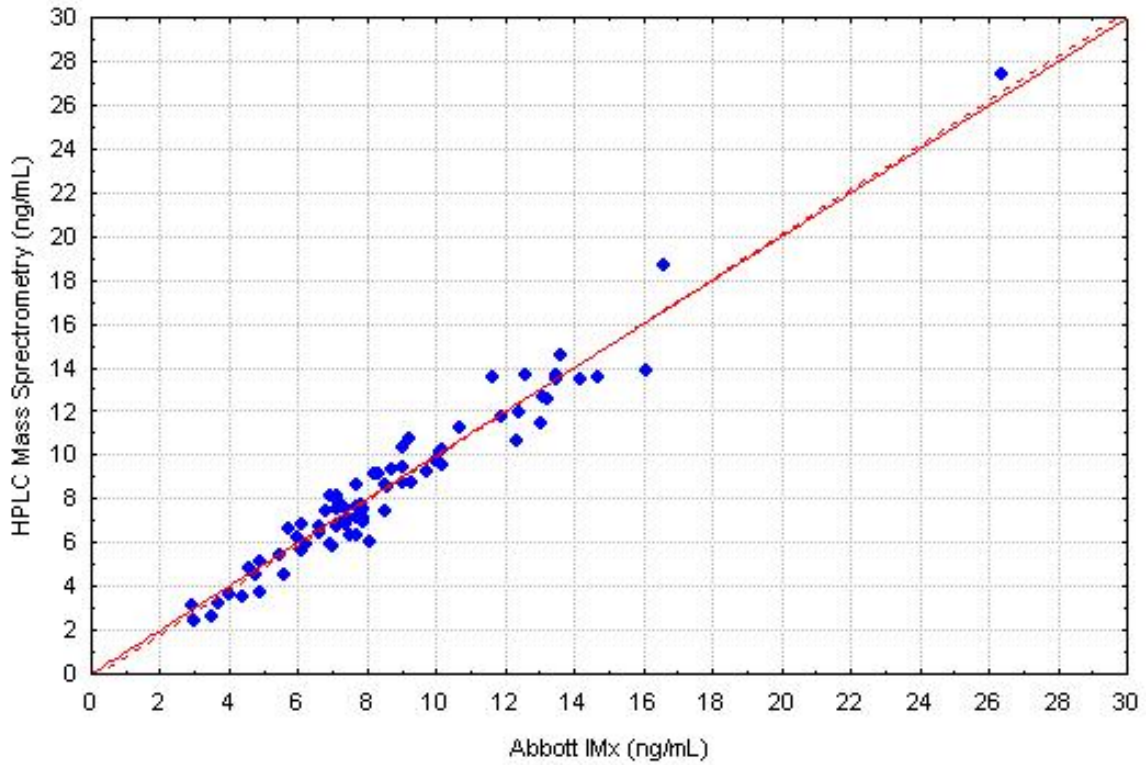
Correlation studies between the Abbott immunoassays and our new HPLC MS method demonstrate <2% difference in patient test results for tacrolimus, however both rapamycin and cyclosporine show clinically significant differences. Rapamycin levels by HPLC MS are biased high by 60 – 80% compared to the Abbott method, while cyclosporine levels by HPLC MS are biased low by 20 – 30% compared to the Abbott method. These differences agree with the expected biases between methods, but these differences will not alter the suggested reference ranges which were established from published literature across all methodologies. Of note, mass spectrometry is specific for cyclosporine A and will not detect other forms of cyclosporine such as cyclosporine G. Correlation plots from validation of the HPLC MS using leftover patient specimens are attached to indicate the magnitude of the expected differences with the new method. Results >30 ng/mL for tacrolimus and rapamycin or >1500 ng/mL for cyclosporine will not be quantitated and only reported as greater than the upper limit of the assay high calibrator.

Patient monitoring trends and target therapeutic goals should be re-established using the new HPLC MS methodology before making significant adjustments to clinical treatment. A limited amount of immunoassay reagent will be available during the transition to provide for testing by both methods for difficult patients, on special request.

Should you have any questions, please contact the laboratory at (413) 794-4541 or Dr. Nichols at (413) 794-1206.

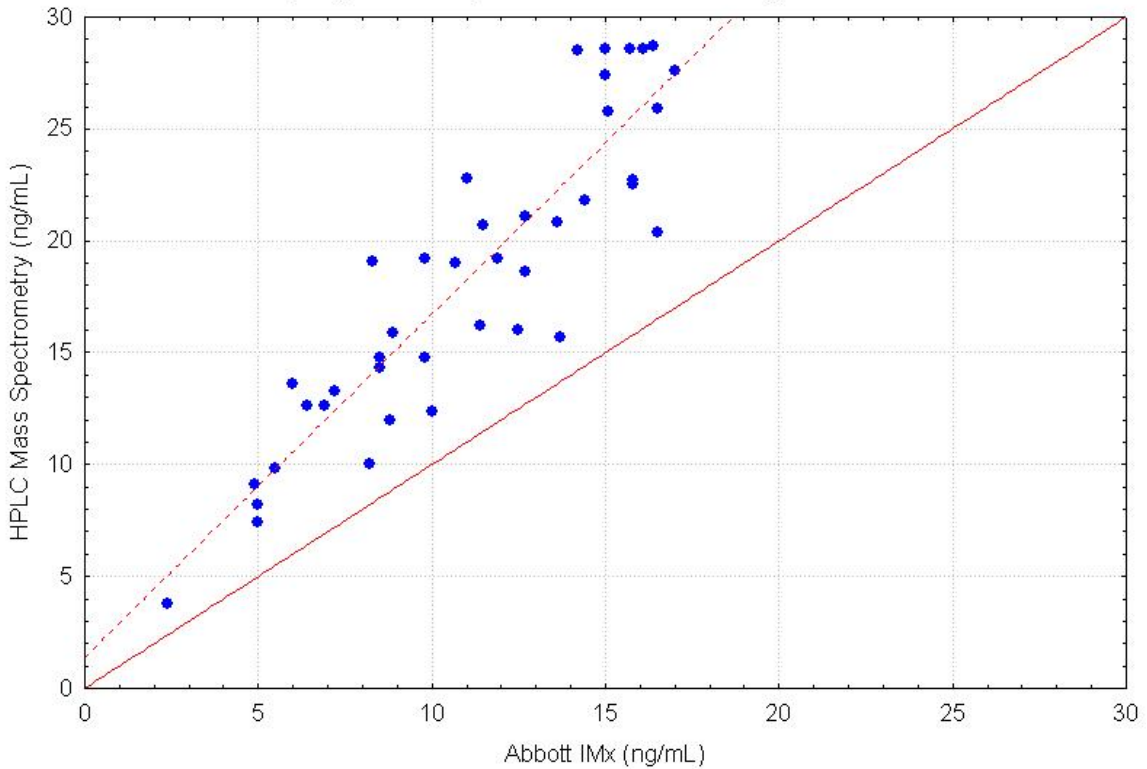
Tacrolimus Correlation Abbott IMx versus HPLC MS

Tacrolimus Mass Spec = $-0.2372 + 1.0171 \cdot x$ $Sy.x = 0.85$



Rapamycin Correlation Abbott IMx versus HPLC MS

Rapamycin Mass Spec = $1.3891 + 1.5335 \cdot x$ $Sy.x = 2.96$



Cyclosporin Correlation Abbott TDx/FLx versus HPLC MS
Cyclosporin Mass Spec = $-2.0323+0.7432*x$ $Sy.x = 10.98$

