Detection of anti-HLA antibody: Comparative evaluation of LABScreen and LIFECODES antibody Luminex assays

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Background and Aim

Clinical relevance of anti-HLA antibodies in Solid Organ Transplantation field is of outmost importance. Solid-phase assays using purified HLA antigens are predominantly used in HLA laboratories. We undertook this study to validate LABScreen (LSM 12, One Lambda) Luminex assay in comparison to our current screening method (Lifecodes). Sera were collected from active renal patients from our kidney waitlist during the quarterly screening period.

Methods

A total of 150 sera was tested of which 146 gave results for either HLA class I and/or II antibodies by LABScreen Mixed kits (One Lambda Inc., USA) and LIFECODES LifeScreen Deluxe kits (GenProbe, USA). The screen results were confirmed by One Lambda single antigen beads (SAB). Lifecodes single antigen beads were not validated used in this study.

Results

There was a 73% (106/146) concordance between the two methods. The discrepancies were equally distributed among class I and II screens. Most class I false negative screens were due to Cw and shared epitopes as confirmed by single antigen testing. Class II false negative results were due to DP antibodies. As predicted, LABScreen does correlate better with SAB results used currently by our laboratory. The two screen assays use slightly different protocol both require good techniques to yield consistent results. They are both affected by tech to tech and run to run variability and one assay is slightly cheaper than the other.

Conclusions

There was a 73% concordance between the two methods, with one method coming short in some HLA antigens. It is important to interrogate patient sera frequently (at least 2 single antigens pre-transplant) with more than one method. Laboratories who are planning to introduce these assays must conduct extensive parallel testing confirmed by single antigens and/or flow PRA.