EN ROUTE TO THE PROMISED LAND: CHALLENGES IN ANTI HLA ANTIBODY TESTING IN ISRAEL

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The precise identification of a patient's anti-HLA antibody profile is essential for proper immune-genetic matching between the donor and recipient and for accurate risk assessment prior to renal transplantation. Therefore, it is critical that the Luminex bead array assay reagents can reflect the possible HLA antigens presented by potential living kidney donors.

We investigated whether the various single-antigen OLI kits (i.e. LabScreen LSA and ExPlex) provide coverage for the 50 most frequent HLA A*, B*, and DRB1* alleles in Israel that represent more than 99.2% of the Israeli population. (Manor et al., 2016).

We found that the standard OLI LSA kits provide coverage for only 48%, 57%, and 54% of the frequent Israeli alleles of A*, B* and DRB1*, respectively. Explex kits provide an additional coverage for 6%, 12%, and 12% of the frequent A*, B*, and DRB1* alleles, respectively. Therefore, antibodies against 46%, 32% and 34% of the most frequent alleles of HLA A*, B* and DRB1*, respectively, remain undetectable. When focusing on the 30 most frequent HLA A*, B*, and DRB1* alleles in the Israeli population, representing 96% of the Israeli population, the portion of unaddressed antigens is narrower at 33%, 13%, and 13%, respectively.

We conclude that considering the unique features of the Israeli population HLA genetics, currently available OLI LSA reagents do not provide a full coverage for some of the most common donor antigen phenotypes. Nevertheless, further analysis that will consider the frequency of the HLA Eplets in the Israeli population together with their representation in the diagnostic reagents may provide a deeper understanding of the potential for comprehensive immunogenetic coverage.