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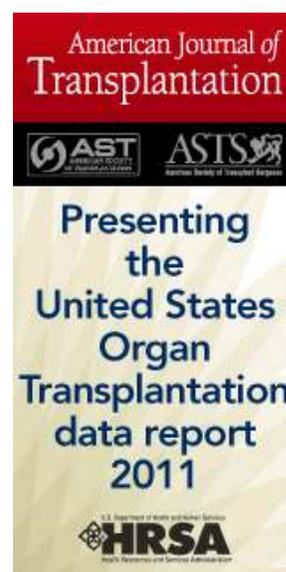

2013 ATC Abstracts

Children Develop De Novo Anti-HLA Antibodies (Abs) Following Kidney Transplantation at a Higher Incidence Than Adults: An Analysis of the NIH CTOT/CCTPT-02 Study

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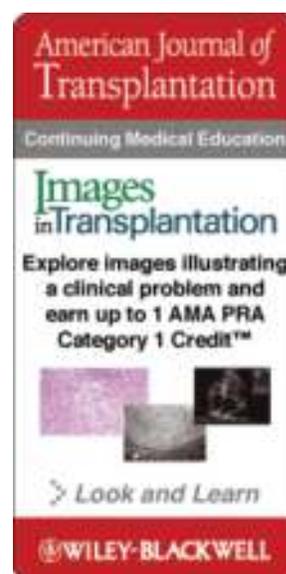


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The NIH CTOT/CCTPT-02 examined the development of post transplant de novo anti-HLA Abs in unsensitized kidney transplant recipients. It is a multi-center observational study that included subjects from 6 pediatric centers and 11 adult centers. Children were defined as being less than or equal to 18 years of age at transplant.

Of the 653 subjects enrolled in the observational study, 98 (15%) were children of whom 55 were male, the mean age was 14 years, range 3-18. 53 were White, 19 were Black, 7 were Asian and 19 were more than one race or unknown; 26 were Hispanic.

Analysis of the total study sample (N=653): 79 (12%) subjects developed



de novo anti-HLA Abs post transplantation. By univariate logistic regression, both young age ($p=0.002$) and pediatric recipient ($p<0.001$) were strongly correlated with sero-conversion. Both age as a continuous variable ($p=0.003$) and pediatric recipient as a categorical variable ($p<0.001$) remained highly significant by multivariate regression.

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Analysis of the pediatric subset (N=98): 24 pediatric subjects (24.5%) developed Abs compared to only 55 of the 555 adult subjects (9.9%). Those who developed Abs tended to be younger (mean 12.6 years) than those who didn't (mean 14.1 years) ($p=0.08$). There were no differences of gender, race, ethnicity nor degree of HLA mismatch between those who sero-converted and those who did not. Those who sero-converted were more likely to have a rejection episode (42%) than those who did not (14%) ($p=0.003$). The type of induction antibody was strongly correlated with the development of anti-HLA antibodies. 54 received anti-IL2R Ab, 28 received ATG, 3 received alemtuzumab, 5 received more than one induction agent and 8 did not received any induction. By univariate analysis, the use of ATG was strongly associated with sero-conversion ($p=0.001$), whereas those who received anti-IL2R Ab were unlikely to sero-convert ($p<0.001$). In the overall study of both children and adults, use of anti-IL2R Ab as induction therapy was independently protective against development of anti-HLA Abs ($p=0.002$, multivariate analysis).

We conclude that children are at significantly higher risk of developing anti-HLA antibodies after kidney transplantation than adults. The choice of induction Ab may influence the risk of sero-conversion.

Harmon, W.: Other, ASN, Public Policy, Bristol-Myers Squibb, Unpaid Consultant. *Chandraker, A.:* Other, Sanofi, Consultant, Novartis, DSMB, Tolera, DMB.

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