

Solid-Organ Transplant Recipients and Breastfeeding While on Immunosuppression

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Abstract

Some transplant recipients have chosen to breastfeed although there are concerns for potential adverse effects of immunosuppression on their offspring. The purpose of this study was to evaluate the children of transplant recipients who were breastfed. Data were collected via questionnaires, interviews, and hospital records by the National Transplantation Pregnancy Registry. Recipients who breastfed from a few days up to 2 yrs included: 51 kidney (K), 64 infants; 14 liver recipients, 18 infants; 1 liver-K recipient, 1 infant; 2 pancreas-K recipients, 3 infants; 2 lung recipient, 2 infants; 1 heart-lung recipient, 1 infant; and 4 heart recipients, 7 infants. There were no problems reported in the children that appeared related to breastfeeding. In conclusion, the relatively small amount of drug transferred in breast milk and the lack of reported adverse effects along with known benefits of breastfeeding may outweigh the risks of the drug exposures in the transplant population.

Purpose

The purpose of this study was to evaluate the children of transplant recipients who were breastfed, and whose mothers had reported to the National Transplantation Pregnancy Registry (NTPR).

Methods

Data were collected via questionnaires, phone interviews and medical records by the NTPR.

Pregnancies in Female Transplants Recipients Reported to the NTPR

Organ	Recipients	Pregnancies	Outcomes*
Kidney	857	1356	1398
Liver	152	262	266
Liver-Kidney	4	6	7
Small-Bowel	1	1	1
Pancreas-Kidney	43	77	79
Pancreas alone	1	4	5
Heart	53	91	92
Heart-Lung	5	5	5
Lung	18	24	26
Totals	1134	1826	1879

*Includes twins and triplets

Types of Immunosuppression Administered to Transplant Recipients

Calcineurin Inhibitors:

- Cyclosporine (CsA)
 - Sandimmune®, Neoral®, Gengraf®, others

- Tacrolimus
 - Prograf®

Adjunctive therapy

- Corticosteroids
- Azathioprine
- Sirolimus (Rapamune®)
- Mycophenolic acid products
 - CellCept®
 - Myfortic®

Reports of Breastfeeding Among Transplant Recipients

Transplanted Organ / Regimen	Number of Recipients/ Children	Gestational Age & Birth Weight	Length of Time Breastfed	Length of Follow-up to date
Kidney CsA	11/ 12	32 – 40 wks 1814-3260 g	few days – 8 mos	0.4 – 21.5 yr
Kidney Neoral®	14/18	31 – 40.5 wks 1786-3459 g	1 wk – 2 yr	1 – 11.4 yr
Kidney Tacrolimus	23/30	24 - 41 wks 1304-2818 g	1 wk – 1 yr	0.5 – 7.3 yr
Kidney Gengraf*	4/6	32 – 38.3 wks 1503–2863 g	2 wks - 1.5 yr	0.25 – 7.6 yr
Liver CsA (3) Neoral (5) Tacrolimus (10)	14/18	34 – 41 wks 2098-4097 g	<2 wks – 1.5 yr	0.4 – 13.8 yr
Liver-kidney tacrolimus	1 / 1	37 wks 2792 gms	4 mos	2 yr
Pancreas-Kidney CsA (2) Tacrolimus (1)	2/3	34-35 wks 1814-2580 g	6 wks– 2 yr	6.5 – 13 yr
Lung CsA	2/2	35 and 37 wks 1899 and 2367 g	10 wks and 3 mos	3.9 and 3.4 yr
Heart tacrolimus	4/7	34 – 37 wks 1758 – 2693 g	2 – 14 mos	0.9 – 4 yr
Heart-Lung CsA	1/1	36.5 wks 2013 g	1 mos	10 yr

* Second pregnancy the recipient was changed to tacrolimus during pregnancy

Conclusions

- The relatively small amount of drug transferred in breast milk and the lack of reported adverse effects along with the known benefits of breastfeeding may outweigh the risk of drug exposures in the transplant population.
- The threshold for determining the level of exposure of an immunosuppressive agent that is acceptable is not known at present.
- Continued study and follow-up of all breast-fed transplant recipient offspring is warranted.
- Centers are encouraged to report all pregnancies in transplant recipients to the NTPR.

To contact the NTPR and report additional pregnancies:

Thomas Jefferson University
1025 Walnut Street, 605 College Building
Philadelphia, PA 19107, USA
Phone: Toll-free 877-955-6877;
215-955-4820;
fax 215-923-1420
Email: NTPR.Registry@jefferson.edu
Website: <http://www.jefferson.edu/ntpr>

The NTPR is supported by grants from:

Novartis Pharmaceuticals, Corp.
Astellas Pharma US, Inc.
Roche Laboratories Inc.
Wyeth Pharmaceuticals