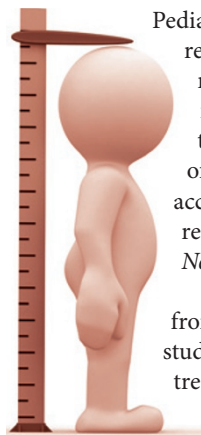


## PEDIATRICS

## Sirolimus may stunt growth of kidney-transplanted children



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Pediatric renal transplant recipients who receive sirolimus as immunosuppression therapy might be at risk of growth retardation, according to a study reported in *Pediatric Nephrology*.

Preliminary findings from an experimental study showed that treatment with sirolimus led to decreased longitudinal growth in young rats,

probably because of inhibitory effects on cell proliferation and vascular endothelial growth factor expression. These findings led González and colleagues to initiate a clinical study investigating growth of pediatric kidney transplant recipients treated with sirolimus.

“Setting up a prospective observational study looked complex and unfeasible,” states

corresponding author Fernando Santos.

“Therefore, we decided to analyze growth data retrospectively obtained from clinical records and compare the data with data from matched kidney-transplanted patients not treated with sirolimus.”

Using clinical records from participating renal transplant units, the researchers obtained data on the growth and renal function of 34 pediatric renal transplant recipients who received immunosuppressive treatment with sirolimus. Children who had primary diseases known to interfere with growth and those with an unstable clinical condition during follow-up were not included. A further 34 pediatric renal transplant recipients who had not received sirolimus and were matched for factors including age, sex and renal function were used as a control group.

The researchers measured height, change in height and growth velocity of the children at 6 months, 12 months and 24 months after initiation of

sirolimus. At each time point, mean increase in height was significantly greater in controls than in sirolimus-treated children. Correspondingly, mean growth velocity was significantly lower in sirolimus-treated children than in controls ( $4.08 \pm 2.94$  cm per year versus  $6.56 \pm 2.91$  cm per year at 6 months, with similar findings at 12 months and 24 months).

These findings indicate that sirolimus treatment might influence the height of kidney-transplanted children. As noted by the authors, however, the results are limited by the small number of patients and the retrospective study design. “The findings would need to be confirmed in a prospective clinical study involving a greater number of patients,” says Santos.

Rebecca Ireland

**Original article** González, D. *et al.* Growth of kidney-transplanted pediatric patients treated with sirolimus. *Pediatr. Nephrol.* doi:10.1007/s00467-011-1811-3