Extending steroid treatment does not benefit children with hard-to-treat kidney disease

20 December 2012

Extending steroid treatment for the most common form of kidney disease in children provides no benefit for preventing relapses or side effects, according to a study appearing in an upcoming issue of the *Journal of the American Society of Nephrology* (*JASN*). The findings challenge previous assumptions about optimal treatment strategies for this disease.

Nephrotic syndrome is the most common kidney disease in childhood. Children with the disease are at risk of developing severe infections and other complications because their kidneys leak important proteins from the blood into the urine. Their bodies also retain water, which results in general discomfort and abdominal pain. Steroids such as prednisolone induce remission in 90-95% of patients; however relapses occur in 60-90% of initial responders. Prolonged prednisolone treatment for initial episodes of childhood nephrotic syndrome may reduce the relapse rate (despite potentially causing serious side effects), but whether this results from an increased duration of treatment or from a higher cumulative dose remains unclear.

To investigate, Nynke Teeninga, MD (Erasmus University Medical Centre at Sophia Children's Hospital, in Rotterdam, the Netherlands) and her colleagues conducted a randomized, double-blind, placebo-controlled trial in 69 hospitals in the Netherlands. They assigned 150 children (nine months to 17 years old) with nephrotic syndrome to either three months of prednisolone followed by three months of placebo or to six months of prednisolone. Patients were followed for an average of 47 months. Both groups received equal cumulative doses of prednisolone (approximately 3360 mg/m2).

- Among the 126 children who started taking medication, relapses occurred in 48 (77%) of the 62 patients who received three months of prednisolone and in 51 (80%) of the 64 who received six months of prednisolone.
- Frequent relapses occurred with similar frequency between groups as well (45% vs 50%).
- There were no statistically significant differences between groups with respect to the eventual initiation of prednisolone maintenance and/or other immunosuppressive therapy (50% vs 59%), steroid dependence, or side effects.

"In contrast to what was previously assumed but unproven, we found no beneficial effect of prolonged prednisolone treatment on the occurrence of relapses. We believe our work offers an important contribution towards more evidence-based treatment of childhood nephrotic syndrome," said Dr. Teeninga. Previous findings indicating that prolonged treatment regimens reduce relapses most likely resulted from increased cumulative dose rather than the treatment duration.

Dr. Teeninga added that because many children with nephrotic syndrome face frequent relapses, future research should focus on preventing relapses through new treatment strategies.

More information: The article, entitled "Extending Prednisolone Treatment Does Not Reduce Relapses in Childhood Nephrotic Syndrome," will appear online on December 20, 2012, doi: 10.1681/2012070646

Provided by American Society of Nephrology