

# Can Viagra treat childhood lymphatic disorder?

February 13 2012, By Erin Digitale

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(Medical Xpress) -- A surprising potential therapy for severe, hard-to-treat malformations of the lymphatic system is now being studied at the Stanford School of Medicine and Lucile Packard Children's Hospital: researchers have a study under way on the benefits of Viagra, a drug best known for treating erectile dysfunction though it has other uses as well, for treating this lymphatic condition.

The malformations, called lymphangiomas, are overgrowths of the one-way lymph channels that return extra fluid from our tissues to the bloodstream. Rarely, in infants and children, these channels grow abnormally large and cause deformity or death. (The overgrowth may choke off a child's airway or interfere with other aspects of heart and lung function.) Lymphangiomas are hard to treat, since the overgrown vessels are often too tangled into vital organs to remove surgically. And the deformity tends to grow with the child, worsening over time.

Physicians at Packard Children's discovered, essentially by accident, that a common drug — sildenafil, a.k.a. [Viagra](#) — appears to shrink the overgrown vessels. They gave sildenafil to a child with a severe lymphangioma to treat another condition, pulmonary hypertension, and noticed that the lymph malformation shrank significantly. Unfortunately, the child's underlying condition was so severe that she later died; however, two subsequent patients have done well on the medication.

A letter published Jan. 25 in the *New England Journal of Medicine* describes the first three cases the Stanford/Packard team treated,

including MRI scans and photos that show dramatic before-and-after changes in the patients' malformations.

“There has been no medical treatment for lymphangiomas; now all of a sudden there may be one,” said Al Lane, MD, a co-author on the NEJM letter and an investigator on the lymphangioma research now being conducted. Lane is a professor of dermatology and of pediatrics at the School of Medicine, and a pediatric dermatologist at Packard Children's.

The mechanism by which the drug could resolve the malformations is not known. The [lymphatic system](#) is a network of “little tubes, little straws — there's a possibility that sildenafil may help to open and drain the channels,” Lane said.

There is precedent for using Viagra in pediatric cases. The drug, for instance, is commonly used to treat pulmonary hypertension in children. Its typical side effects in children are nausea, headaches and cold-like symptoms such as a runny nose or fever, Lane said. Spontaneous erections are possible but are an infrequent side effect.

The research team has a long way to go in determining if and how sildenafil should be routinely used to treat these malformations, Lane cautioned. They're now studying a handful of children using seed funds from SPARK and Spectrum's Innovations in Patient Care grant from NIH-CTSA, as well as medication provided by Pfizer, and they're applying to the U.S. Food and Drug Administration's orphan conditions program for funds to run a larger trial.

“We think this may work, but we don't know,” Lane said. “We need to do a placebo-controlled trial.”

However, the fact that the condition is so severe and hard to treat made the team feel that it was important to get the word out about the early

findings, Lane added. “We felt like, if it really works, and we have data to suggest that it does, it wasn’t fair for patients who have no other options to not at least know what we’re observing,” he said.

Provided by Stanford University Medical Center

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