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Research provides hope to cure infantile hemangiomas

When Veronica was just 5 days old, her lip split open. Her mom thought her lip was chapped and put petroleum jelly on it. But it continued to get worse.

At Veronica's two-week checkup, her doctor told her mom she had a hemangioma that would grow, but eventually go away on its own. However, because Veronica's lip had split, she suggested Veronica be seen by a specialist at Children's Hospital of Wisconsin.

Infantile hemangiomas are tumors made of blood vessels. Most are not visible at birth, however, they grow and change rapidly. They can be found anywhere on the skin, but about 70 percent are found on the scalp, face and neck.

"These tumors rarely are life-threatening, but they are heartbreaking because they can be so horribly disfiguring and painful," said Paula North, MD, PhD, pediatric pathologist and medical director of Pathology and Laboratory Medicine at Children's Hospital of Wisconsin, and professor and chief of Pediatric Pathology at the Medical College of Wisconsin.

Dr. North and her research team have been studying infantile hemangiomas for several years. "We've made progress – we had a breakthrough last year," she said. "We understand why the tumors go away on their own, so we developed a way to make them go away quicker."

The breakthrough discovery happened in the labs at Children's Hospital of Wisconsin Research Institute. Dr. North and her team discovered a protein called p16. It makes the tumor-producing cells stop growing. It doesn't kill the cells, but when p16 is turned on, it causes the cells to lose the ability to divide and multiply. This is called senescence.



Paula North, MD, PhD, reviews slides in her laboratory at Children's Hospital of Wisconsin's Research Institute.

"Now we're discovering how to make p16 turn on earlier in these tumors, so they don't grow at all," said Dr. North. "This has the potential to benefit a vast number of kids in the future."

Until then, children like Veronica will continue to be treated using a variety of therapies. Today, Veronica's hemangiomas are gone, and she is thriving after receiving care at Children's Hospital.

Dr. North said she and her team have come a long way toward understanding cellular growth and senescence, and there is a potential for these discoveries to be used to treat certain cancer cells. "Using what we've learned about premature senescence, we'll be able to make malignant endothelial cells (cells that line the inside of blood vessels) stop growing," she said.



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