

# High blood pressure may point to hidden health problems for kids in the ER

December 2 2011

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(Medical Xpress) -- More than half of children admitted to an urban Florida pediatric emergency department had elevated blood pressure, according to a study published in the journal Pediatric Emergency Care.

Elevated [blood pressure](#) is often a sign of kidney or other [health problems](#) in children. Evaluating the readings thoughtfully and ordering further tests could be a key to diagnosing a serious problem, said Dr. Phyllis Hendry, an associate professor in the department of emergency medicine at the University of Florida College of Medicine-Jacksonville and one of the authors of the study.

Researchers looked at charts of nearly 1,000 patients, 18 years old and under, admitted to Shands Jacksonville medical center over a 13-month period in 2007 and 2008. Researchers were only expecting to see about 100 patients with elevated [triage](#) blood pressure — 90th percentile or higher — but found more than 500, Hendry said. More than 20 percent had severely elevated levels — 95th percentile or higher, said Hendry, who also serves as assistant chair of research for the emergency medicine department.

The study also found that elevated blood pressure was recognized on the medical record in only a small percentage of cases — among residents, fellows and experienced [pediatric emergency](#) physicians.

“In adult emergency patients, we are very focused on blood pressure and abnormal values are clearly defined,” Hendry said. “In children, it’s easy

to dismiss a high value because often they are anxious, crying or in pain. There are a number of things that can affect blood pressure.”

But as hypertension among children is on the rise — now in 5 percent of American youth, up from 1 percent in the 1970s and 1980s — the emergency department can play a larger role in flagging potential problems. The standards are based on age, weight and even height — a measurement not usually taken in pediatric emergency departments.

Hendry said it is difficult to know how much weight to give the statistics because of the lengthy list of variables that go into calculating a “normal” blood pressure for a child.

“You can be transitioning from examining a premature baby that weighs 3 pounds to a 300-pound adolescent, so what is normal blood pressure supposed to be?” Hendry said.

Standards are also based on measuring the blood pressure three times and taking the mean of the three readings, which is not practical in an emergency department.

Emergency department blood pressure is also often given little credence because children are upset and scared, which could skew the numbers, Hendry said. However, the study found the pain level of the child was not associated with blood pressure elevation, nor was the race of the child, Hendry said.

If patients are in the emergency department for several hours or more, their vital signs are usually checked again or at discharge. Researchers say if a child’s blood pressure remains elevated, physicians should suggest a follow-up appointment with the child’s primary care physician within a few weeks.

Hendry said a likely follow-up study would be to look at the blood pressure reading at that next primary care visit to see if it is still elevated.

As hospitals move toward electronic medical records, ways to flag high blood pressure in children would be valuable, according to Dr. Arno Zaritsky, senior vice president of clinical services at Children's Hospital of The King's Daughters in Norfolk, Va.

It is difficult to compare emergency department blood pressure levels with standardized levels, but it would certainly be worth checking the blood pressure again a week or two later outside of the emergency setting, said Zaritsky, also a medical consultant for the American Heart Association, who was not involved in the research.

"I think the take-home is maybe we should have a process as part of sending them home that we check the blood pressure later to make sure that it does come down," Zaritsky said.

The UF College of Medicine-Jacksonville study began when Dr. Tracy L. Ricke, had a patient she was set to release but found the blood pressure staying high. She ordered a complete workup and found the patient was in [kidney](#) failure. Ricke, a pediatric emergency fellow at the time and now with Children's Hospitals and Clinics of Minnesota, initiated the study to see how many other cases emergency departments might be overlooking.

Other study authors are Colleen Kalynych, and Dr. Vivek Kumar, with the UF College of Medicine-Jacksonville division of [emergency medicine](#) research; Elena M. Buzaianu, with the University of North Florida; and Colby Redfield, a summer volunteer medical student.

Provided by University of Florida

Citation: High blood pressure may point to hidden health problems for kids in the ER (2011, December 2) retrieved 5 April 2024 from <https://medicalxpress.com/news/2011-12-high-blood-pressure-hidden-health.html>

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