Can Nurse and Patient Education Reduce Missed Doses of Medications to Prevent Blood Clots in Hospitals?

Principal investigator
Elliott R. Haut, MD, PhD

Organization
Johns Hopkins University

What was the research about?
Blood clots that develop inside veins can cause serious health problems or even death. Although anyone can get a blood clot, more than half of blood clots happen after a hospital stay or surgery. Medicine to thin the blood can help prevent this problem, but missing even one dose can lead to blood clots. Hospitals want to do a better job of making sure patients don't miss any doses.

The research team wanted to see if teaching hospital patients and nurses about medicine to prevent blood clots would lower the number of missed doses. Patient education took place right after a patient missed a dose of their medicine at the hospital. The team created three options to teach patients about blood clots. The patient could choose a 2-page handout, a 10-minute video, or talking with a patient educator. The research team also compared two ways to teach nurses about blood clots. One way was an interactive online training program. The other was an online training program that had a slide show with a voice recording.

What were the results?
Compared with patients who didn't learn about blood clots, patients who learned about blood clots right after a missed dose were less likely to refuse medicine to prevent blood clots. They were also less likely to miss receiving the medicine for other reasons.

After nurses took part in training about how to prevent blood clots, fewer patients missed a dose of medicine to prevent blood clots compared to before the training. The study didn't find that one way to train nurses was better than the other.

Who was in the study?
The study included 19,652 patient visits at a hospital in Baltimore, Maryland, who were prescribed medication to prevent blood clots. Half of the patients were men and half were women. Almost half of the patients were white, and a little less than half were African American.

The study also included 933 nurses who worked full-time at the hospital.

What did the research team do?
When a patient missed a dose of medicine to prevent blood clots, the research team received an alert. If a patient refused the medicine, the team asked the patient if he or she wanted to learn about blood clots and why taking the medicine is important. If a patient missed their medicine for a reason other than refusing it, then the research team told the patient's nurse to make sure the patient received their medicine. The research team counted the patients who took or refused the medicine before and after the hospital offered to teach patients about blood clots.

Nurses took one of the two online training programs about medicine to prevent blood clots. After the training, the research team looked at how many times the nurses' patients missed a dose of medicine to prevent blood clots.
What were the limits of the study?
This study took place at one hospital. The results may not be the same at other hospitals. Not all patients who missed their medicine for blood clots took part in the study. Some patients went home before the research team could talk with them, and others didn't want to be part of the study.

Future research could test the nurse training and patient education at different types of hospitals and in different locations.

How can people use the results?
These results show that when patients and nurses know more about blood clots and how to prevent them with medicine, patients are less likely to miss doses of this medicine. Hospitals can consider teaching patients who don't take their medicine about how to avoid blood clots right after patients refuse their medicine. Hospitals can also consider training for nurses.

To learn more about this project, visit pcori.org/Haut047.