

Self-Monitoring Lowers Risks for Patients on Anti-Clotting Drug

April 15 2010, By Randy Dotinga

A new review of existing research finds that many patients who take an anti-clotting drug or "blood-thinner" can benefit from monitoring the levels of the drug themselves instead of going to clinics for blood tests.

The review authors found that people who monitor the levels of [warfarin](#) -- also known as Coumadin -- in their blood can reduce their risk of [blood clots](#) and death without increasing their risk of serious uncontrolled bleeding.

However, as many as half of [patients](#) might not be able to monitor themselves, and the research suggests that patients face different levels of risk depending on what they do with the [blood-test](#) results.

Still, self-monitoring of Coumadin levels "could be a good idea if patients are carefully selected," said Dr. Edith Nutescu, director of the Antithrombosis Clinic at the University of Illinois at Chicago, who is familiar with the review findings.

People with mechanical valve replacements and conditions like atrial fibrillation -- [irregular heartbeat](#) -- face a significant risk of [stroke](#) from blood clots. Coumadin adjusts the body's ability to form blood clots, making them less likely, but taking the drug is not a simple matter.

A person's [diet](#) -- particularly of foods high in vitamin K -- can disrupt Coumadin levels in the body and Nutescu said hundreds, if not thousands, of medications can throw off the levels. "Let's say someone

catches a cold,” she said. “An antibiotic can push your level higher and make you bleed.”

Patients must get regular blood tests to make sure their Coumadin levels are not too high, which can put a patient at risk of uncontrollable bleeding, or too low, which might fail to prevent blood clots.

“The challenge is to maintain the level of the drug within this very marrow margin, where it’s most effective, but also safe,” Nutescu said.

However, getting regular blood tests is inconvenient and costly. When patients first take a blood thinner, they need blood tests every few days, Nutescu said. Eventually, they can lower the frequency to once a month, she said, but that rate might last for a lifetime.

In the new review, researchers at the University of Oxford and colleagues looked for studies that examined what happened when patients monitored their Coumadin levels at home by using devices similar to blood-glucose monitors for diabetics. They found 18 randomized studies that met their criteria.

The review appears in the current issue of The Cochrane Library, a publication of The Cochrane Collaboration, an international organization that evaluates research in all aspects of health care. Systematic reviews draw evidence-based conclusions about medical practice after considering both the content and quality of existing trials on a topic.

As a whole, the studies suggested that self-monitoring reduced the risk of dangerous blood clots by 50 percent and the risk of death -- by any cause -- by 36 percent. These lower risks remained even after the review authors removed studies they considered to be of low quality.

There were some differences between groups of patients. People who

adjusted their own Coumadin levels after taking blood tests had lower levels of blood clots and death by any cause; those who relied on contacting clinics for instructions on adjusting their doses had lower levels of major bleeding incidents.

It is unclear why the difference exists, although it is possible that people who monitor their own Coumadin levels might think uncontrolled bleeding is less of a big deal than a blood clot and adjust their drug levels accordingly, said review co-author Carl Heneghan, deputy director of Oxford's Centre for Evidence-Based Medicine. As a result, they would keep their Coumadin levels a bit higher than the ideal range.

The review authors also found that about half of patients would not be eligible to monitor their Coumadin levels because they refused to take part in the studies, their physicians deemed them ineligible or they could not get through training.

Cost could be another factor. The monitoring devices cost up to \$2,500, although insurance often covers them, said Dr. Henry Bussey, a professor at the University of Texas at Austin's College of Pharmacy who consults for a company that makes software to monitor Coumadin levels.

He said Coumadin self-monitoring does have plenty of benefits. Among other things, it frees patients from feeling as if they must be available to take blood tests at local laboratories. Patients, he said, will not need to avoid travel due to fear of being far from laboratories where they can get blood tests.

However, he said, it is important to make sure doctors are in the loop and adjust Coumadin levels for patients after reviewing blood test results.

More information: Garcia-Alamino J, et al. Self-monitoring and self-management of oral coagulation. Cochrane Database of Systematic Reviews. Issue 4, 2010.

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