Prescribing tool may help to reduce incidence of stroke

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Warfarin tablets. Credit: University of Technology, Sydney

A 102-year-old patient, lucid, intelligent and still with things to accomplish in life, underlined the value of hospital pharmacist Beata Bajorek's work in stroke prevention.

Associate Professor Bajorek had been paged to give her expert opinion on a recommendation the woman not be prescribed warfarin.

Without it, the patient was at high risk of stroke; with it, she was at high risk of bleeding and other complications.

"She asked all the right questions and understood all my answers and all the risks. After I'd left the ward, my pager went off again and I was called back to answer more questions, but in the end the warfarin was prescribed and dispensed. I was satisfied she knew what she was doing," says Associate Professor Bajorek, of the Graduate School of Health at UTS.

Years later, the memory has stayed with A/Prof Bajorek as she continues her research on a web-based tool to help decide the best treatment for people with atrial fibrillation (AF) or heart arrhythmia.

The Computerised Antithrombotic Risk Assessment Tool, or CARAT, uses three measures to assess a patient's suitability for anticoagulant therapy. Importantly, it takes age out of the equation.

Under old prescribing practices, in a time when the pharmaceutical options for AF came down to warfarin versus aspirin, the centenarian's age would have disqualified her from receiving warfarin. Warfarin is now one of a suite of anti-coagulant drugs while aspirin has been proved to be of no use in stroke prevention for people with AF.

"The older you are the more likely it is that you'll need anticoagulant therapy. But the older you are, the more difficult it is for you to use such medicines," she says.

"But just because you're old doesn't automatically mean you should never take warfarin."

The CARAT provides separate checklists for a person's likelihood of stroke; their risk of having a bleed, internally or externally; and a medication safety assessment, including a range of factors such as risk of a fall, cognitive impairment, drug interactions and kidney and liver function.

"The tool doesn't presume that warfarin or another anticoagulant is the ideal outcome. The aim is to work out who should be taking such medicines and who shouldn't be."

When the clinician has entered information for all three assessments, the CARAT will provide a recommendation on a person's eligibility for drug therapy and what dose they should take.

A/Prof Bajorek and her collaborators are now working with the second iteration of the tool, and have done a pilot trial at a Sydney hospital. Data from that trial showed that, after the application of the tool, two-thirds of patients were recommended a change to their therapy. That led to a significant increase in the number of patients prescribed anti-coagulants (89.2% of study patients).

The majority of health professionals who used CARAT version 2 believed it would help to improve medicine use and thereby help to reduce the incidence of stroke.

Next steps, pending funding, include a randomised controlled trial and an expansion of the tool to engage patients in the decision-making process.

A/Prof Bajorek says she foresees a day when specialist pharmacists and nurse practitioners as well as GPs would use the tool routinely in ongoing risk-benefit assessment for medication prescribing in stroke prevention.