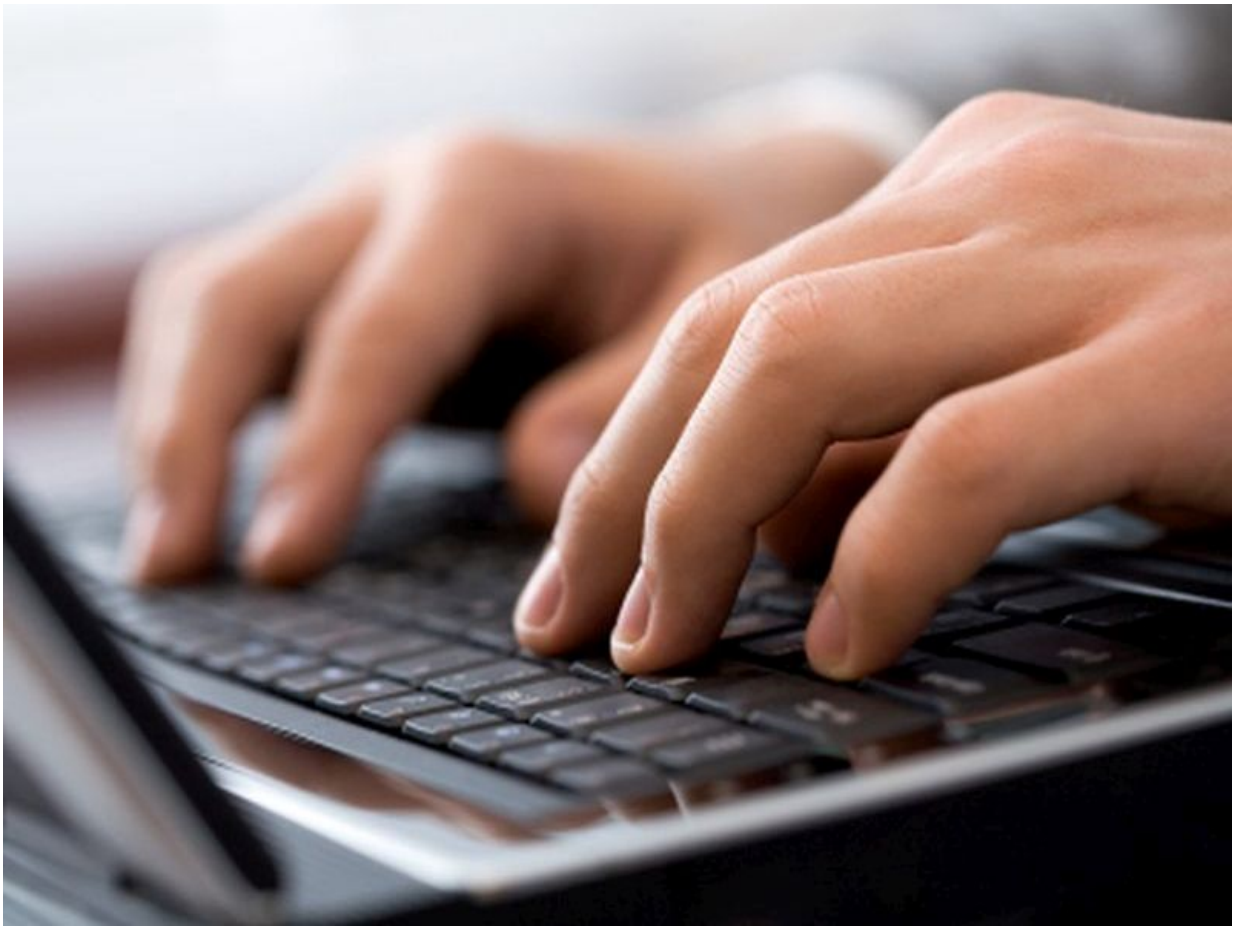
Could a computer someday guide breast cancer care?

December 9 2016, by Dennis Thompson, Healthday Reporter



(HealthDay)—An artificially intelligent computer system is making

breast cancer treatment recommendations on a par with those of cancer doctors, a new study reports.

The IBM computer system—called Watson Oncology—made treatment recommendations that jibed nine out of 10 times with those of a multidisciplinary board of doctors at a top cancer hospital in India, researchers say.

In cases involving more complex cancers, however, the computer did not hit that 90 percent mark.

Another version of Watson famously defeated two former winners on the game show "Jeopardy!" in 2011, winning a first-place prize of $1 million.

In its oncology role, Watson digests a patient's medical history and current cancer data in under a minute. It then spends another minute reviewing all existing medical evidence regarding their particular form of cancer, said study co-author Dr. S.P. Somashekhar, chairman of the Manipal Comprehensive Cancer Center in Bengaluru, India.

The program then lists possible treatments in three categories—recommended treatments, treatments worth considering and therapies not recommended, Somashekhar said.

"It will show all of the options, and it will share the evidence," he said.

"Clinicians in one minute can know what the options are according to the evidence. Then you're in a better place to make a right judgment, especially when you have too many choices and too many variables," Somashekhar said.

The computer program was developed with specialists from Memorial

Sloan Kettering Cancer Center in New York City. For now, it's programmed to advise only on breast, lung and colon cancers.

The oncology program is intended to be a companion to doctors, rather than a potential replacement, Somashekhar said.

"Ultimately, you must understand treating human beings is not mechanical," he said. "It is a compassionate one-to-one interaction. What may seem right may not be right for a particular patient. This requires empathy and a human touch."

But given the overwhelming amount of new medical evidence regarding cancer that's produced almost daily, Watson Oncology is a tremendous benefit, Somashekhar said. It rapidly scans through all available evidence, including new findings that doctors might not yet know about.

Dr. Stephanie Bernik, chief of surgical oncology for Lenox Hill Hospital in New York City, agreed that the program could be a very valuable resource.

"It's probably very good for physicians who aren't working in a group," Bernik said. "It's almost like getting a second opinion."

To test the program's effectiveness, Somashekhar and his colleagues studied the cases of 638 breast cancer patients who had been treated at Manipal Hospitals in India.

The team entered data on the cases into the computer system, and compared Watson's recommendations to those produced by a group of 12 to 15 cancer doctors who meet weekly to review cases.

Overall, 90 percent of Watson's recommendations were consistent with the advice of the tumor board, the researchers reported.

However, the degree of agreement varied depending on the type of breast cancer. The computer agreed with the human doctors nearly 80 percent of the time in cases where the breast cancer had not spread to other parts of the body, but only 45 percent of the time in metastatic cases.

In cases of triple-negative breast cancer, which occurs more often in younger women, Watson agreed with the doctors 68 percent of the time. But in HER2-negative cases, which has more treatment options, its recommendations matched the physicians' recommendations only 35 percent of the time.

In general, the computer differed with human doctors most often in more complex cancer cases, Somashekhar said.

"More complicated cases lead to more divergent opinions on the recommended treatment," he said.

Dr. Harold Burstein is a medical oncologist with Boston's Dana-Farber Cancer Institute. He said this early pilot study suggests that Watson "can validate good decision-making in oncology, which is already based on detailed treatment algorithms that are available worldwide." Burstein wasn't involved in the study.

"It also highlights some of the limitations of using this platform when there are many equally reasonable treatment options, and in areas of the world where not all treatments may be available," Burstein added.

"The art of being a good doctor is to link the science of the disease and treatment to the needs of the person sitting before you," he said.

The study results were scheduled for presentation Friday at the annual San Antonio Breast Cancer Symposium in Texas. The findings should be

considered preliminary until peer-reviewed for publication in a medical journal.

More information: For more on Watson Oncology, visit Memorial Sloan Kettering Cancer Center.