# Study shows radiation device may customize therapy, enable some to avoid more lengthy treatment

September 25 2008

Radiation device may customize therapy. Credit: UCSD

A study of the first approximately 100 patients who have received partial breast irradiation with a small, whisk-like, expandable device inserted inside the breast has shown that after one year, the device is effective at sparing nearby healthy tissue from the effects of radiation. The device, called SAVI™, is aimed at providing customized radiation therapy while minimizing exposure to healthy tissue around the breast after a woman has received a lumpectomy for early stage cancer.

The findings, reported recently at the American Society of Clinical Oncology's 2008 Breast Cancer Symposium held in Washington, D.C., showed that nearly half of the women, because of their anatomy or the location of the tumor, would not have qualified for other such similar

internal radiation therapy techniques and would have likely needed a much longer course of therapy.

The device is another option for women with early breast cancer who have received a lumpectomy to remove a cancer. Radiation specialists sometimes opt to give women internal radiation – a process called brachytherapy – with the goal of giving concentrated doses of radiation to areas of concern while avoiding healthy tissue such as the heart, lungs, ribs and skin.

In the study, the researchers found that the Food and Drug Administration-approved SAVI, which consists of flexible catheters through which radiation is given, is easy to use and enabled them to change the dosages according to the woman's needs. They saw very little radiation burning of the skin and a low infection rate. In addition, it allows women to have treatment twice daily for five days rather than daily for six weeks.

"The problem with other internal radiation methods is that women with small breasts, or with a tumor bed near the breast surface, would get skin burns with the standard device," said Catheryn Yashar, M.D., assistant professor of radiation oncology and chief of breast and gynecological radiation services at the Moores Cancer Center at the University of California, San Diego, who led the work. "The SAVI device was created to overcome those downsides. It enables specialists to shape the radiation to the shape and size of the woman's tumor and still miss healthy tissue.

"These findings emphasize the fact that we could expand the patient population eligible for partial breast irradiation because of the SAVI," Yashar said.

In recent years, a balloon-like device called the MammoSite has been increasingly used to deliver radiation therapy internally after

lumpectomy. Another technique, called interstitial irradiation, involves the use of needles in the breast and has gained some popularity as well. But according to Dr. Yashar, neither device has been proven superior to whole breast irradiation for local and regional control of early breast cancer. "Partial breast irradiation is in its infancy," she said.

"Of the patients we've treated here, 30 to 40 percent would not have been eligible for a MammoSite (a balloon device) and wouldn't have otherwise been treated by partial breast irradiation this way," noted Daniel Scanderbeg, Ph.D., a resident in medical physics in the department of radiation oncology. The reported results involve the first 102 patients seen at the Moores Cancer Center, Arizona Oncology Services and the Breast Care Center of the Southwest, both in Phoenix, AZ.

The SAVI breast brachytherapy applicator is made by Cianna Medical, Inc. The Moores UCSD Cancer Center was one of the first medical facilities in the nation to offer SAVI.

Yashar thinks that SAVI or devices like it could become the standard eventually for radiation therapy for early breast cancer, though it is still early on in its testing. Radiation oncologists at the Moores UCSD Cancer Center have begun teaching others about device placement and radiation treatments.

Source: University of California - San Diego