

Less-toxic chemo improves outlook for advanced bladder cancer

August 19 2011

(Medical Xpress) -- New data from the University of Rochester Medical Center confirms that an easier, two-drug chemotherapy regimen given to bladder cancer patients prior to surgery shrinks locally advanced tumors and completely eliminates all evidence of cancer in some patients.

Published in the journal *Cancer*, the study is promising news for people diagnosed with Stage 2, 3 or 4 muscle-invading bladder cancers. Typically these patients must decide whether it is best to have surgery immediately, or to try to knock down the [malignancy](#) first with pre-surgery chemotherapy. If an individual chooses the latter course, according to scientific literature the most effective regimen is a four-drug cocktail, [methotrexate](#), vinblastine, [doxorubicin](#), and cisplatin, (MVAC). However, MVAC tends to injure the [bone marrow](#) and cause serious infections and sometimes death.

The URMIC team investigated the effect of two other [chemotherapy drugs](#), [gemcitabine](#) and [cisplatin](#) (GC), in a series of 160 patients treated at the University's Strong Memorial Hospital from 1999 to 2009, and found that GC is a good substitute with fewer side effects.

Research has shown that in cases of locally advanced disease, giving chemotherapy before surgery can improve a patient's outcome. However in practice, many doctors and patients avoid this option due to fear about the rigors of MVAC, particularly since [bladder cancer](#) mostly afflicts older people, said Edward M. Messing, M.D., the Winfield W. Scott Chair of the URMIC Department of Urology.

“With our latest finding,” Messing said, “we hope pre-surgical chemo will become more acceptable.”

In clinical practice, GC is often used in place of MVAC when the bladder cancer has already spread. But researchers wanted to see if the data could be extrapolated to non-metastatic cases.

Therefore, the primary goal of the retrospective cohort study was to determine whether locally advanced tumors treated with GC prior to surgery disappeared entirely or shrank enough to become less threatening and move down to a lower stage.

Of the 160 patients, 25 received pre-surgery GC and 135 did not receive any chemotherapy. Remarkably, in 20 percent of the patients who received chemo (5 people out of 25) the GC treatment entirely eliminated the tumor. In addition, 44 percent of patients experienced shrinkage consistent with a lower stage of cancer, which also gave them a favorable outlook. The pre-surgery GC group was also significantly less likely to have residual invasion of cancer in the nearby tissue and muscle.

Researchers also compared survival in the pre-surgery chemo group to the surgery-only group, for a period of approximately three years. The GC chemo group had fewer deaths (32 percent) than the surgery-only group (43 percent), although the comparison was not precise because the chemo group tended to have people who were younger and with fewer unrelated serious health problems. On the other hand, patients receiving GC usually had more advanced and aggressive cancers.

Messing noted that even when pre-surgery chemo has a positive effect, cancerous tissue can hide deep in the bladder, making removal of the bladder necessary.

Emelian N. Scosyrev, Ph.D., assistant professor of Urology at UPMC and the lead author of the study, emphasized that he cannot make any definitive claims about whether GC is equivalent to MVAC, as no one has conducted a prospective, head-to-head comparison of the two chemo regimens in patients with locally advanced bladder cancer.

However, he said, “Since both types of [chemotherapy](#) are capable of shrinking or eliminating bladder cancer, and since GC is significantly less toxic, we believe our study is an important addition to the literature.”

Bladder cancer is common, afflicting about 70,000 people in the United States annually, with men more likely to be diagnosed than women. Median age is 73, according to the National Cancer Institute, and the probability of developing the disease is much higher after age 50. The overall relative five-year survival rate is 78 percent, however, as with all cancers, regional or distance metastasis greatly increases the death rates.

More information: [onlinelibrary.wiley.com/journal/1002/\(ISSN\)1097-0142](https://onlinelibrary.wiley.com/journal/1002/(ISSN)1097-0142)

Provided by University of Rochester Medical Center

Citation: Less-toxic chemo improves outlook for advanced bladder cancer (2011, August 19) retrieved 13 May 2024 from <https://medicalxpress.com/news/2011-08-less-toxic-chemo-outlook-advanced-bladder.html>

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