Medical Xpress

Breast and colorectal cancers remain more aggressive in children

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Breast and colorectal cancers rarely occur in children, but when they do, these conditions are more precarious, according to a pair of National Cancer Data Base (NCDB) studies presented this week at the 2014 Clinical Congress of the American College of Surgeons.

Both breast cancer and colon cancer are known as adult conditions. According to the American Cancer Society, 95 percent of new breast cancer cases occur in women age 40 and older.[1] Colorectal cancer is also largely an adult cancer, with 90 percent of cases occurring in people who are age 50 and older.[2]

Public emphasis on screening tests has improved detection rates and outcomes for both cancer types in the last 10 years for people age 50 and older, according to a March 2014 report from the American Cancer Society.[3] Outcomes in breast cancer patients have improved steadily as well.[1]

However, researchers at Seattle Children's Hospital and Maine Medical Center wanted to investigate what happens when patients under age 21 are diagnosed with breast cancer and colorectal cancer.

"The thought that kids even face these diseases is surprising," said Morgan K. Richards, MD, research fellow in the division of general surgery at Seattle Children's Hospital. "But that's why it's important to study such diseases. Although rare, they are not impossible to find in children. We need to better understand how these cancers present and

progress so we know how to recognize them clinically and so we can counsel patients and their families."

Pediatric breast cancer patients have a longer time between diagnosis and treatments

Dr. Richards and her colleagues looked at several years of patient medical records (1998 to 2011) entered in the National Cancer Data Base (NCDB) of the American College of Surgeons and American Cancer Society. Of the 2,636,722 breast cancer patients, only 574 were age 21 or younger.

They found two striking sets of differences between the adults and those under age 21: First, the younger patients had a totally different demographic profile than the adult population of patients. More than 25 percent of the younger patients were African-American, compared with only 10 per-cent of the adult patients. The younger patients were also more likely to be male and uninsured. Dr. Richards says the demographic differences are consistent with previous, smaller studies. Second, the results also showed that the younger breast cancer patients fared worse. Their cancers were more aggressive and often discovered at a later stage.

The younger breast cancer patients also had longer intervals between definitive surgical treatment and radiation or chemotherapy compared to adults. It took the younger patients a week longer than the adult patients to get surgical treatment. Because breast cancer in young people is so rare, Dr. Richards said the longer time between diagnosis and an operation makes sense. "It may take an extra biopsy or secondary pathologic confirmation to make the diagnosis."

However, after surgical treatment, it took younger patients nearly an

additional 100 days to receive radiation therapy. "That delay is a red flag for further investigation," Dr. Richards reported. "Once the operation happens, you typically know what the diagnosis is," Dr. Richards explains. "We don't know what's causing the extended time period between the operation and radiation therapy, but clinically, it's potentially significant. There may be good reasons for the delay, but even rare diseases benefit from standardized care. Getting this information out among providers may help to raise awareness of this discrepancy between pediatric and adult care."

Pediatric colon cancer patients have lower five-year survival rate than adults

The second team of investigators from Maine Medical Center mined the National Cancer Data Base (NCDB) to look at how younger patients fared after a colorectal cancer diagnosis. Between 1998 and 2011, about 920 of the colorectal cancer patients recorded in the NCDB were age 21 or younger. There were 157,779 young adult patients between ages 22 and 50. As expected, the vast majority of patients were over age 50 (1,304,085).

The youngest group of patients, age 21 and under, were more often diagnosed at stage III or IV of the cancer compared with older patients, and proved to have more aggressive tumors even when comparing similar stage cancers. That finding could explain why they were also more likely to have more aggressive treatments, such as total removal of the colon and rectum. Older patients were more likely to have only the malignant sections of the colon removed.

"There must be an underlying reason or predisposition leading to these patients developing colorectal cancer so young," said Monica Langer, MD, pediatric surgeon at Maine Medical Center in Portland. "If you

don't perform a total resection they will need a lot more surveillance postoperatively."

Despite a more aggressive surgical treatment, pediatric patients still had lower five-year survival rates than young adults. Previous studies have drawn similar conclusions, but this study used the largest sample size to date and is the first to directly compare pediatric with adult patients for this type of cancer.

Both Dr. Richards and Dr. Langer say the studies are too early to have direct implications for treatment, but the results serve as a call to raise awareness among pediatric clinicians about these findings and highlight different behavior of these cancers in children for reasons we don't yet under-stand. Studying these patients may improve our understanding of colorectal and breast cancer for all ages.

A need for stronger collaboration with clinicians who treat adults

These studies stem from the ACS Commission on Cancer's effort to release information from the NCDB for research to improve patients' outcomes. "There is robust data available about breast and colon cancers for adults, but practically nothing about kids" said Kenneth W. Gow, MD, FACS, a pediatric surgeon at Seattle Children's Hospital, the Children's Oncology Group Co-Principle Investigator, and an ACS Commission on Cancer Liaison Physician. "These cancers are certainly rare but our analyses of the NCDB illustrates that children do develop them as well."

Pediatric colorectal cancer patients are often evaluated and treated for colitis or irritable bowel syndrome before anyone begins to suspect cancer. "But now, maybe clinicians will be more vigilant and keep in

mind that "these cancers really can develop in children,'" Dr. Gow said. He added that the studies also call for stronger collaboration between pediatric care providers and those who care for adults: "Collaboration is needed to help standardize therapies for these rare tumors in children. We need to utilize the expertise from our adult colleagues to help treat these patients being cared for in pediatric centers to improve their survival rates," he concluded.

More information: 1 American Cancer Society. Breast Cancer Facts and Figures 2011-2012. www.cancer.org/acs/groups/cont … ent/acspc-030975.pdf (.) Accessed October 3, 2014.

2 American Cancer Society. Colon Cancer Facts and Figures 2011-2013 with 90 percent of new cases developing in patients. Accessed October 3, 2014.

3 American Cancer Society. Report: More Colon Testing Leads to 30% Drop in Cancer Rates. Accessed October 3, 2014.

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