Cancer Surgery Survival Better at Busy Hospitals

Two strategies—selective referral and quality improvement—might address the disparities.

BY JANE SALODOF MACNEIL
Southwest Bureau

SAN DIEGO — A new study has found that foregut cancer patients are significantly more likely to live 5 years after surgery if their operations are performed in hospitals doing a large number of procedures annually, Dr. John D. Birkmeyer said at a symposium sponsored by the Society of Surgical Oncology.

To determine the association between hospital volume of surgical procedures and long-term surgical mortality, Dr. Birkmeyer and his coinvestigators analyzed 10 years of information (1992-2002) in a linked Surveillance, Epidemiology, and End Results (SEER)–Medicare database.

The researchers divided hospitals into high-, medium-, and low-volume terciles based on the number of procedures performed each year. They adjusted data for patient age, acuity, comorbidities, income, stage, and adjuvant therapy to ensure they were not making unfair comparisons.

The greatest differences in the data were produced by esophageal resections, Dr. Birkmeyer reported. Five-year survival was twice as high for high-volume hospitals as for low-volume centers: 34% vs. 17%.

For gastric surgery, the survival curves were similar but showed a smaller difference at 5 years: 32% vs. 26%.

For pancreatic cancer, high-volume hospitals started out with a large advantage in postoperative survival that lasted for about 2 years. Although the difference was still significant at 5 years, it was narrower: 16% vs. 11%. "Quality in this particular cancer may help you run, but it won't help you hide," Dr. Birkmeyer said at the meeting, where he presented results for three of six cancers in the new study.

"For foregut cancer, hospital volume has a huge effect in terms of hospital mortality, bigger than on almost any other operation," he said. "High-volume hospitals have better outcomes largely because they have higher-volume surgeons," he added.

An earlier study by his group and others established that high-volume centers had lower short-term surgical mortality (in hospital or within 30 days) than did hospitals doing relatively few procedures (N. Engl. J. Med. 2002;346:1128-37). When his group compared highest- and lowest-volume hospitals in that study, pancreatic resection and esophagectomy produced the greatest differences in absolute risk of mortality, at 12.5% and 11.9%, respectively. Pneumonectomy had a 5.4% difference in risk. Gastric cancer operations shared fourth place with cystectomy; both had a difference of 2.9%.

The new work shows that the benefit of high volume persists over time, said Dr. Birkmeyer, the George D. Zuidema professor of surgery at the University of Michigan, Ann Arbor. Relatively few previous studies have compared long-term survival, and most studies were small or dated, he said.

Dr. Birkmeyer suggested two strategies—selective referral and quality improvement—to address the disparities revealed by his work. He was not optimistic that either could achieve results any time soon, however.

Selective referral would focus on directing patients to the best hospitals. The media's publication of best hospital lists, the posting of comparative information on Internet databases, and payer efforts to steer patients to selected centers of excellence provide information that can enable selective referral, Dr. Birkmeyer said.

©LIN JONES/UNIVERSITY OF MICHIGAN PHOTO SERVICES

"For foregut cancer, hospital volume has a huge effect in terms of hospital mortality, bigger than on almost any other operation," Dr. John D. Birkmeyer said.

Part of this effort could include closing low-volume centers, he added. "The problem of low-volume surgery is in population-dense areas," he said, citing previous research showing that patients would not have to travel long distances for care if low-volume centers were closed.

But pushback from angry providers and the lack of an authority to enforce such changes are greater obstacles to such plans, according to Dr. Birkmeyer. "Private payers have the will. They don't have the leverage," he said. "Medicare has the leverage. It doesn't have the will."

The second strategy—quality improvement—would "raise the tide" so that all hospitals performed optimally. Proponents would "systematically track surgical outcomes, identify practices associated with optimal outcomes, and assure those practices are implemented as broadly as possible."

This might not be possible for cancer surgery, however, Dr. Birkmeyer said. First there is the challenge of identifying processes that matter, and then of finding a way to broadly implement them. For example, he cited findings that patients at high-volume hospitals get a wider variety of preoperative tests, are likelier to see a specialist before surgery, and tend to have slower operations. They also receive more invasive monitoring, and for some cancers are more likely to receive adjuvant therapy.

These processes have not been identified as important mediators, according to Dr. Birkmeyer, and he questioned whether they might simply reflect stylistic differences. ■

More Pancreatic Ca Patients Having Surgery, but Prognosis Still Poor

BY JANE SALODOF MACNEIL
Southwest Bureau

SAN DIEGO — A 15-year study of pancreatic cancer trends in the United States found more patients are receiving potentially curative surgery, but only those with node-positive disease benefit from adjuvant radiation, Dr. Nancy N. Baxter reported at a symposium sponsored by the Society of Surgical Oncology.

Although cancer-directed surgery improved survival for patients with localized disease, median and long-term outcomes remained dismal, she said.

"Pancreatic cancer has the worst survival rate of any malignancy," said Dr. Baxter of the department of surgery at the University of Minnesota in Minneapolis.

She and her colleagues used the Surveillance, Epidemiology, and End Results (SEER) database to track 48,658 patients over age 18 who were diagnosed with pancreatic cancer between 1988 and 2002. The age-adjusted incidence of pancreatic cancer did not change over this period, she said. While 17.5% of patients were not staged, she reported that staging improved significantly over time. About a third of all patients had nonmetastatic disease.

The data showed that median survival was 4 months overall, but 9 months for patients with nonmetastatic disease, Dr. Baxter said. Disease-specific survival for all patients was 4.8% at 5 years. Patients with nonmetastatic disease did better—at 8.8%—than did patients with metastases, at 1.5%.

A total of 12% of all patients underwent cancer-directed surgery. Among 15,031 patients with nonmetastatic disease, 4,462 (30%) had surgery. The proportion of patients with nonmetastatic cancer who received surgery increased from 19% in 1988 to 34% in 2002.

Two subgroups were much less likely to be operated on, however: the elderly and African Americans. A person under age 50 was more than 11 times as likely to have surgery as someone over age 80. Compared with white patients, the odds ratio predicting surgery for African Americans was 0.85.

"There is no rationale for disparities in rate," Dr. Baxter said, in answer to an audience question about the age differential. "We need to think about treating patients who are older more aggressively."

For patients with nonmetastatic disease, median survival was longer for those who had surgery than for those who did not: 16 months vs. 7 months, respectively. Those who had surgery also had better 5-year disease-free survival (19.7% vs. 3.8%) and better 5-year overall survival (14.9% vs. 2%).

About 42% of patients who had surgery also were irradiated. The SEER database does not include chemotherapy data, Dr. Baxter said. But because radiochemotherapy is standard for pancreatic cancer, most patients receiving radiation probably had radiochemotherapy, she acknowledged.

Patients with localized disease were less likely to have radiation therapy after surgery (odds ratio 0.78). Among those operated on, radiation was more likely in patients under age 50 than among those over age 80 (odds ratio 5.7) and was less likely in African Americans than in whites (odds ratio 0.74).

To evaluate the effects of radiation, the investigators considered only those patients who survived long enough for radiation to be an option. They assessed 3,756 patients who were irradiated and lived at least 3 months after diagnosis.

If patients had radiation therapy, 5-year disease-specific survival was slightly worse with node-negative localized disease and about the same with node-negative extensive disease, but was better with node-positive disease (hazard ratio 0.73), she said.

"The effect of adjuvant radiation is dependent on the extent of disease," she said. "For patients with limited disease, there is no apparent benefit. For patients with node-positive disease, there is benefit."

Dr. Baxter added that the analysis supports the results of the adjuvant European Study Group for Pancreatic Cancer-1 (ESPAC-1) study, which found benefits for surgery and chemotherapy but not for chemoradiation (Ann Surg. 2001;234:758-68). Radiation's apparent lack of efficacy in patients with limited disease may explain the difference between the ESPAC-1 results and results of single-institution series, she said, in that the latter typically enroll sicker patients. ■

Pages 62a—62b◊