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Research Highlights

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Radiofrequency Ablation May Provide Relief for Patients With Pain From Bone Metastases

The presence of bone metastases is the most common cause of cancer pain. The spread of a tumor to the bone can occur with any cancer, the most common being breast, lung, prostate, and thyroid cancer and multiple myeloma. Despite recent advances, a significant number of these patients do not receive adequate pain relief. Radiofrequency ablation (RFA) is the local application of thermal energy to a specific metastatic lesion. RFA has been used most often for primary and metastatic liver tumors. A recent multicenter study involving 43 patients with painful bone metastases showed that RFA may be a promising method of pain relief in patients who have not been helped by conventional means. The study methodology was prospective, with patients serving as their own controls. Prior to receiving RFA, the mean score for worst pain in this group of patients was 7.9 (on the Brief Pain Inventory–Short Form). Patients were evaluated weekly for the first month and every two weeks for the second month. Four weeks following treatment, the mean score for the worst pain decreased to 4.5, with continued decreases at subsequent assessments. A two-unit drop was considered clinically significant and was experienced by 95% of the patients studied. The requirement for opioid analgesia also decreased over the study period. The investigator concluded that RFA provided a significant reduction in pain scores and an improvement in overall quality of life in the patients studied.

Goetz, M.P., Callstrom, M.R., Charboneau, J.W., Farrell, M.A., Maus, T.P., Welch, T.J., et al. (2004). Percutaneous image-guided radiofrequency ablation of painful metastases involving bone: A multicenter study. *Journal of Clinical Oncology, 22,* 300–306.

Acetaminophen Improves Pain and Well-Being in Patients Already Receiving a Strong Opioid Regimen

Approximately 75% of people with advanced cancer suffer from significant pain. Many people with cancer have persistent pain despite the use of strong opioids, which is the standard for treatment in developed countries. Often the doses of opioids used are not adequate to completely control a person's pain because of the desire to decrease troublesome side effects. In the United Kingdom and Australia, acetaminophen frequently is used with strong opioids to augment analgesia. In the United States and Canada, acetaminophen often is used with weak opioids but not with strong opioids. Acetaminophen usually is grouped with nonsteroidal anti-inflammatory drugs as a coanalgesic, but it does not share the common side effects. It is safe and well tolerated in conventional doses; its only major side effect is liver toxicity, which is rare, even in patients with chronic hepatic disease. Investigators from Australia designed a study to determine whether the addition of acetaminophen could help decrease pain levels and improve feelings of well-being in people with advanced cancer despite current treatment with strong opioids. The target population was ambulatory patients with advanced cancer who continued to have pain even with a stable opioid regimen. The participants were recruited from two major cancer referral centers in Toronto, Canada, and Sydney, Australia. The design of the study was a double-blind, placebo-controlled, two-period crossover trial. All patients received acetaminophen (1 g every four hours five times per day) for a 48-hour period and an identical-appearing placebo using the same schedule for a second 48-hour time frame. The order that the study medications were given was assigned by the study pharmacist using a computer-generated list. Pain measurement was the primary outcome and was assessed by a verbal numeric scale ranging from 0 (no pain at all) to 10 (worst pain imaginable) and 10-cm visual analog scale with similar anchors. Patient preferences, incidence of breakthrough pain, well-being, and adverse effects were the secondary outcomes. More patients preferred acetaminophen (n = 14) over placebo (n = 8), but many had no preference (n = 8). The average pain and overall well-being scores were better on the days the participants took acetaminophen. The investigators concluded that acetaminophen did improve pain and overall well-being in patients already on a regimen of strong opioids. The improvements were small but clinically important. The addition of acetaminophen in patients on strong opioids is worth considering because of the potential for increased analgesia and well-being without increases in side effects.

Stockler, M., Vardy, J., Pillai, A., & Warr, D. (2004). Acetaminophen (paracetamol) improves pain and well being in people with advanced cancer already receiving a strong opioid regimen: A randomized, double-blind, placebo-controlled cross-over trial. *Journal of Clinical Oncology, 22,* 3389–3393.

New System Assesses the Quality of Cancer Care

During the past decade, research on the quality of cancer care has demonstrated that increases in the knowledge of treatments with proven efficacy do not translate directly to the optimal delivery of such treatments to patients. In a 1999 report, the Institute of Medicine concluded that many patients with cancer did not receive state-of-the-art care and recommended the creation of a quality monitoring system capable of regularly reporting on the quality of care for patients with cancer. The American Society of Clinical Oncology (ASCO) has developed a prototype for a national system that could monitor the quality of cancer care: the National Initiative on Cancer Care Quality (NICCQ). NICCQ was initiated in 2000 with the goals of developing potential measures of the quality of cancer care for two common cancers, breast and colorectal, ascertaining current practice for those two diseases, and designing and implementing the first phase of a prototype quality monitoring system. Using ACSO's National Cancer Database (a national registry of incident cancer cases) and its network of participating hospital cancer registries, the NICCQ project identified and solicited the participation of approximately 5,000 patients diagnosed with breast or colorectal cancer during 1998 in one of five major metropolitan areas of the United States. When completed, the project is expected to produce a detailed profile of the quality of care for breast and colorectal cancer in the five selected metropolitan areas. The following ASCO recommendations are based on lessons learned from the prototype NICCQ project implementation.

- The goal of a national quality monitoring system should be to measure and report on the quality of cancer care as accurately as possible for the lowest achievable cost.
- A National Quality Monitoring System should have four key features.
  - A carefully designed sampling protocol to ensure that sampled patients are representative of the population of patients with the same cancer diagnosis
  - Procedures of protecting the privacy and confidentially of personal information
  - Inclusion of rigorously developed measures of the quality of cancer care that are validated and updated regularly
  - A comprehensive and ongoing data collection protocol that relies on at least

Digital Object Identifier: 10.1188/05.ONF.533-534

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three sources of available data (i.e., registry data, medical records, and patient surveys)

Additionally, ASCO found that identification of patients soon after diagnosis makes locating them for consent and survey easier and makes for more complete patient recall about salient providers and events. The downside of identifying patients soon after diagnosis is the additional time required to measure outcomes for long-term survivors. The NICCQ project analysis phase is expected to demonstrate additional challenges in the production and interpretation of quality measurement results. Such a system can identify opportunities to improve care, suggest which quality improvement initiatives lead to better care, and monitor the impact of quality improvement on the outcomes for patients with cancer.

Schneider, E.C., Epstein, A.M., Malin, J.L., Kahn, K.L., & Emanuel, E.J. (2004). Developing a system to assess the quality of cancer care: ASCO's National Initiative on Cancer Care Quality. *Journal of Clinical Oncology, 22,* 2985–2991.

Risk of Second Malignant Neoplasms Is Higher 20 Years After Childhood Cancer

Friedman et al. (2004) presented the results of a retrospective cohort study at the 2004 annual American Society of Clinical Oncology meeting. The objectives of the study were to determine the incidence and spectrum of secondary malignant neoplasm (SMN) among a cohort of patients surviving 5+ and 15+ years after childhood cancer and to determine disease treatment and host-related risk factors for second malignancies. SMNs were determined and verified by pathology reports from a childhood cancer survivor cohort of 20,720 five-year survivors. Detailed treatment data and a wide range of outcomes were analyzed. Survivors of childhood cancer were found to be at increased risk for second malignancies when more than 20 years from their original diagnoses. At 20 years, the cumulative incidence of SMN among survivors for 5+ years of childhood cancer was 5.2%. Analysis according to years from diagnosis of original cancer demonstrated that risk of SMN is increased over time for all survivors, with the highest risk for those exposed to radiation therapy. Radiotherapy, or a primary diagnosis of Hodgkin lymphoma, neuroblastoma, or soft tissue sarcoma, were identified as independent risk factors for late SMNs. Risk after 15 years is highest for second breast and thyroid cancers. Further study is warranted to better define risk factors, develop effective surveillance and preventive strategies, and determine lifetime excess risk.

Friedman, D.L., Whitton, J., Yasui, Y., Mertens, A.C., Hammond, S., Stovall, M., et al. (2004). Risk of second malignant neoplasms (SMN) 20 years after childhood cancer: The updated experience of the Childhood Cancer Survivor Study (CCSS) [Abstract 8509]. *Proceedings of the American Society of Clinical Oncology, 22,* 801s.

Intervention May Help Patients With Cancer Who Have Fatigue

Cancer treatment-related fatigue (CRF) is the most common side effect of cancer treatment across cancer diagnoses, stages of disease, and treatment regimens. CRF is reported by more than 90% of individuals on active treatments. Two researchers piloted an energy conservation and activity management (ECAM) intervention for CRF. The lack of effective methods for managing CRF was the impetus for the pilot study intending to examine the feasibility of conducting the ECAM interventions and to describe CRF patterns for two groups undergoing active therapy. Eligible patients in the ECAM study were older than 18; currently initiating treatment for breast, lung, prostrate, or colorectal cancer with at least three cycles of chemotherapy or six weeks of radiation therapy; had previous treatment other than surgery at least six months ago; and were receiving treatment for cure of local control rather than palliation alone. The pilot study used a single group pretest–post-test design to examine the feasibility of conducting the ECAM intervention. A technique of ECAM was used for one group of 8 patients receiving radiation and 20 patients receiving chemotherapy. The second group, a control group, consisted of 182 patients receiving standard care for CRF. The intervention involved three telephone sessions with an advanced practice nurse that focused on information about fatigue, development of an energy conservation plan, and evaluation of the plan's effectiveness. The intervention was based on a common sense model in which information affected the cognitive representation of the symptom, personal guidance in formulation of an energy conservation plan, and assistance in appraising the effectiveness of the effort. Participants kept a daily journal. Patterns of fatigue differed in the ECAM study group and the nonequivalent control group, suggesting that the intervention moderated the expected rise in fatigue resulting from cancer therapy. Patients who participated in the phone sessions said that the sessions were useful and that they planned to continue using the skills they learned. The conclusions of this study are tentative because of the limitation of the sample size of the ECAM study group and the nonequivalent status of the control group. However, the data suggest that the ECAM intervention is well tolerated and acceptable to patients.

Barsevick, A., Whitmer, K., Sweeney, C.A., & Nail, L.M. (2002). A pilot study examining conservation for cancer treatment related fatigue. *Cancer Nursing, 25,* 333–341.

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