

## FEATURE ARTICLE

# Part I: Regional Chemotherapy Clinical Studies in Nontraditional Clinical Settings

Geoffrey D. Seidel, RN, BSN, MS, Julie Locklin, RN, MSc,  
and Paula M. Muehlbauer, RN, MSN, OCN®

Regional infusion of antineoplastic agents at the time of surgery or during a procedure provides a unique opportunity for oncology nurses and other nurses and technicians to develop cutting-edge policies and procedures for safe administration. The administration of these agents occurs in nontraditional clinical settings of the National Cancer Institute (NCI) and National Institutes of Health, including the operating room and the interventional radiology suite. This article (part I) provides a summary of the regional antineoplastic therapy clinical studies currently under way in the surgery branch of the Center for Cancer Research at NCI. Part II (see page 345) provides an overview of the nursing implications of administering the agents in these nontraditional clinical settings.

The concept of regional perfusion (the administration of antineoplastic agents to a localized area of tumor) is not new. The technique first was developed for the treatment of cutaneous melanoma confined to an extremity. It was reported as a limb-sparing modality in the 1950s (Creech, Kremenz, Ryan, & Winblad, 1958). Melphalan, an alkylating agent that is non-cell-cycle specific, was used because repeated doses were not needed to achieve the desired effect. Eleven years later, the addition of hyperthermia (38°C–40°C) to melphalan was shown to dramatically increase response rates (Stehlin, 1969). In the early 1990s, European studies showed increased efficacy in isolated limb perfusion when tumor necrosis factor was added to the standard perfusion with hyperthermia plus melphalan (Lienard, Lejuene, & Ewalenko, 1992).

Traditionally, chemotherapy and surgery have been primary treatments for most types of cancers. The trend of combining multiple modalities to treat regional cancer holds promise that the approach will produce greater response rates than with a single form of therapy. Regional infusion of chemotherapy provides direct exposure of the drug to the neoplasm while limiting systemic toxicities (Alexander, Bartlett, Fraker, & Libutti, 1996). Infusion of hepatic intra-arterial chemotherapy has been reexamined many times since it first was described in 1961 (Ausman, 1961) and is gaining popularity again along with other regional chemotherapy strategies.

Today's treatment modalities in the Surgery Branch of the Center for Cancer Research at the National Cancer Institute (NCI) include cytoreductive surgery, placement of specialized catheters and/or pumps for one-time or continuous regional chemotherapy infusion in the interventional radiology (IR) suite and operating room (OR), creation of an intraoperative

### At a Glance

- ◆ New and evolving clinical trials at the National Cancer Institute involve the operating room and interventional radiology suite to deliver cancer therapies.
- ◆ Regional administration of chemotherapy is not a new concept, but it has been honed.
- ◆ Clinical trials using surgery as well as chemotherapy include isolated hepatic perfusion, continuous hyperthermic peritoneal perfusion, percutaneous hepatic perfusion, and ThermoDox™ plus radiofrequency ablation.

Geoffrey D. Seidel, RN, BSN, MS, is a protocol nurse coordinator II with SAIC-Frederick, Inc., in support of the Tumor Angiogenesis Section of the National Cancer Institute's Surgery Branch in Bethesda, MD; Julie Locklin, RN, MSc, is a research nurse specialist in the Department of Radiology, and Paula M. Muehlbauer, RN, MSN, OCN®, is a clinical nurse specialist in Nursing and Patient Care Services, both at the National Institutes of Health in Bethesda. This project has been funded in whole or in part with federal funds from the National Cancer Institute and National Institutes of Health, under contract N01-CO-12400. The content of this publication does not necessarily reflect the views or policies of the Department of Health and Human Services, nor does mention of trade names, commercial products, or organizations imply endorsement by the U.S. government. No significant financial relationship to disclose. Mention of specific products and opinions related to those products do not indicate or imply endorsement by the *Clinical Journal of Oncology Nursing* or the Oncology Nursing Society. (Submitted July 2005. Accepted for publication October 2, 2005.)

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