

# Assessing and Managing Chemotherapy-Induced Mucositis Pain

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Cancer remains a major cause of illness and death in the United States, although new treatments are improving survival rates. The American Cancer Society (2004) estimated that the five-year relative survival rate was 63% for all patients with cancer diagnosed and followed from 1992–1999. Although chemotherapy has been very effective in many cancers and produced cures in some cancers such as acute leukemia, Hodgkin disease, and testicular tumors, it has significant side effects. Chemotherapeutic drugs are particularly toxic to highly proliferative tissues such as hair follicles and oral mucosa. In particular, approximately one million episodes of mucositis occur annually in the United States (Dodd et al., 2000). According to Epstein and Schubert (1999), oral mucositis is the most common condition requiring systemic analgesics during cancer therapy. Because of the use of growth factors and the dose response seen with many agents in vitro, high-dose chemotherapy is increasingly used for many hematologic and solid malignancies (Avritscher, Cooksley, & Elting, 2004). This trend is likely to contribute to an increased incidence of mucositis episodes.

Mucositis is a general term that describes the inflammatory response of mucosal epithelial cells to the cytotoxic effects of chemotherapy. All mucous membrane-covered surfaces from the mouth to the rectum may be affected (Camp-Sorrell, 2000). Mucositis may include inflammation of the oral mucosa (stomatitis), esophagus (esophagitis), or gastrointestinal tract (gastroenteritis). Stomatitis occurs in approximately 40% of patients undergoing chemotherapy and

Acute pain is the major clinical problem associated with mucositis. Mucosal tissue injury is a dose-limiting toxicity of many cancer therapies. Because the number of patients treated with combinations of high-dose chemotherapy agents is likely to increase, more patients are at risk for mucositis. Currently, no consensus exists regarding mucositis prevention, assessment, or treatment. Similarly, research is needed in methods to accurately assess and manage pain for mucositis. Multiple interventional approaches are needed to decrease the emotional and physical distress caused by acute oral pain and mucositis. An assessment tool that includes physical, functional, and pain parameters is presented. Although approaches to prevent and treat mucositis are increasing, appropriate assessment and timely directed interventions can minimize patient distress.

**Key Words:** pain measurement; assessment, nursing; stomatitis

more than 75% of patients undergoing bone marrow transplantation (Wojtaszek, 2000). The incidence and severity of mucositis vary greatly among patient populations, yet mucositis significantly reduces quality of life and patients' treatment experiences.

Oral pain is the major clinical problem associated with stomatitis; however, thorough pain assessment may be lost among other assessment parameters. Pain assessment must be tied to the extent of mucosal injury for appropriate interventions. An assessment tool that includes physical, functional, and pain parameters is presented in this article. Because mucositis is a dose-limiting toxicity of many cancer therapies, it can impact survival directly (Avritscher et al., 2004). Unresolved or untreated mucositis can create complications that jeopardize outcomes and increase morbidity, including infections and impaired nutritional status. In severe

or prolonged cases, parenteral nutrition or tube feedings may be indicated. Treatment of mucositis is currently palliative and symptom oriented; however, prophylactic measures are being investigated.

## Mucositis and Oral Pain

Mucosal tissue is highly susceptible to injury from chemotherapy because its cells are rapidly undergoing mitosis. Mucositis adversely affects nutrition, speech, comfort, and treatment compliance. Because the oral cavity is easily examined, stomatitis is the best-characterized and most frequently studied manifestation of mucositis (Melichar et al., 2001). Stomatitis generally describes an acute

inflammation or ulceration of the oral or oropharyngeal mucosal membranes (Wojtaszek, 2000). This inflammation causes numerous symptoms, including dysphagia, dyspepsia, malabsorption, diarrhea, pain, and infection. The terms mucositis and stomatitis often are used interchangeably.

The International Association for the Study of Pain (IASP) developed a definition of pain: "Pain is an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such

*Submitted May 2004. Accepted for publication August 23, 2004. (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.)*

Digital Object Identifier: 10.1188/04.CJON.622-628