



ROC February 2014 Newsletter

The Use of Gabapentin for Radiation Induced Mucositis in Head and Neck Cancer Patients

Cancers of the head and neck are typically treated with combined modality therapy using chemotherapy, radiation, and/or surgery. Oral mucositis is a common treatment effect of therapy for head and neck cancer and can occur with chemotherapy and radiation therapy. Furthermore, these effects generally increase with escalating radiation dose. Mucositis is characterized by erythema, inflammation, pain and ulceration and typically starts in the second to third week of radiation therapy. Mucositis can be a dose-limiting toxicity despite improved dose distribution to the oral cavity with more modern radiation techniques such as IMRT (intensity-modulated radiation therapy). Complications of oral mucositis include pain, dysphagia, decreased oral intake, weight loss, depression, and decreased quality of life. Furthermore, this can lead to significant treatment interruptions and hospitalizations, which may lead to decreased efficacy of chemoradiation.^{1,2}



Traditionally, mucositis has been treated with opioid/narcotic medications for symptomatic relief. However, these drugs are often associated with multiple side effects such as respiratory depression, sedation, nausea, constipation, and potential for addiction. In recent years, Gabapentin, a drug traditionally used to treat neuropathic pain, has been incorporated in the treatment of oral mucositis for head and neck radiation patients treated in our practice. The attractive aspects for the use of Gabapentin include

tolerability, lack of serious toxicities, and ease of use. It also does not have the addictive potential that opioid medications have. Clinical data from U. of Pennsylvania suggests that Gabapentin is effective in treating radiation-induced oral mucositis. In a retrospective study by BarAd, et. al. of 29 patients undergoing head and neck radiation (IMRT) between 2004-2006, only 10% of patients required additional narcotic pain meds during weeks 3&4 of radiation treatment, despite grade 2 or higher mucositis present in 56% and 73% of the patients, respectively. Furthermore, only 35% of patients required additional narcotics in weeks 5&6, despite the presence of \geq grade 2 mucositis in 80% of cases (see Figure 1).³ None of these patients received chemotherapy.

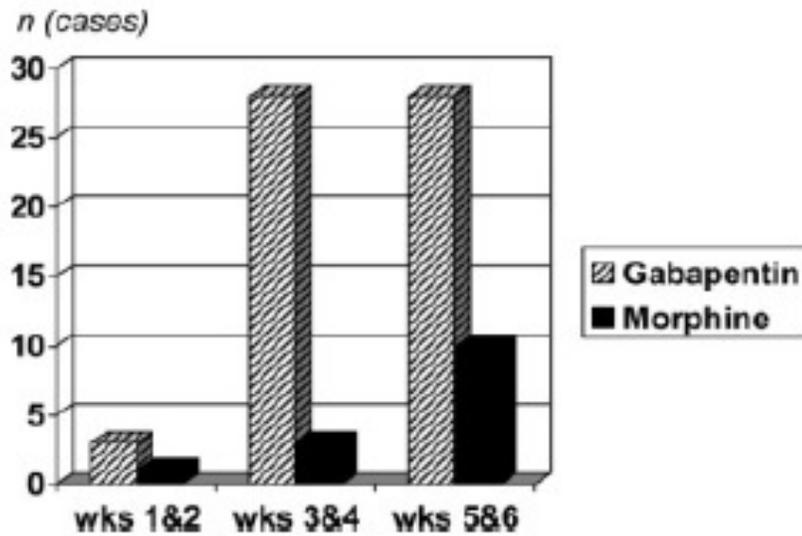


FIGURE 1. Gabapentin and morphine use during the intensity-modulated radiation therapy weeks.

The dosing of Gabapentin used was a median dose of 2700 mg/day. It was started in the second week of radiation treatment at 600 mg qhs for 2 days, and then increased to 300 mg tid for 2 days, then 600 mg tid for 2 days, then 900 mg tid for 2 months. It was then tapered down after 2 months once symptoms improved.

More recent data by BarAd, et. al. examined the use of Gabapentin in 42 patients undergoing combined chemoradiation for head and neck cancer. This study showed similar results to the previous study.⁴ Patients on a median dose of 2700 mg/day of gabapentin required decreased amounts of low-dose narcotic medications for pain control. The only adverse side effect of Gabapentin reported was dizziness in two patients. Only 1 patient had a treatment-related interruption of >3 days during chemoradiotherapy. Further prospective studies assessing QOL in H&N patients treated with Gabapentin during chemoradiation are currently ongoing at U. of Pennsylvania.

Gabapentin appears promising in reducing the need for high total doses of opioids and avoiding unplanned treatment interruptions for patients with head and neck malignancies treated with concurrent chemoradiotherapy. Arpi Thukral, MD, (ROC Physician) was involved in the ongoing research at U. of Pennsylvania during her residency and has incorporated the use of Gabapentin into her practice. In addition, many of the physicians of ROC are also currently using Gabapentin in their practice when treating head and neck cancer patients. Our group has found increased pain control and decreased treatment breaks in these patients. If you are interested in learning more about the use of Gabapentin this setting, please contact Dr. Arpi Thukral at athukral@chicagocancer.org.

References:

- 1) Vera-Llonch, et. al., *Oral mucositis in patients undergoing radiation treatment for head and neck carcinoma*. Cancer. 2006 Jan 15;106(2):329-36.
- 2) Trotti, et. al., *Mucositis incidence, severity and associated outcomes in patients with head and neck cancer receiving radiotherapy with or without chemotherapy: a systematic literature review*. Radiother Oncol 2003;66(3):253-262
- 3) BarAd, V. et. al., *Gabapentin for the treatment of pain related to radiation-induced mucositis in patients with head and neck tumors treated with intensity-modulated radiation therapy*. Head Neck. 2010 Feb;32(2):173-7.
- 4) BarAd, V. et. al., *Gabapentin for the treatment of pain syndrome related to radiation-induced mucositis in patients with head and neck cancer treated with concurrent chemoradiotherapy*. Cancer. 2010.