

# ONCOLOGY NURSE ADVISOR FORUM

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## QUESTIONS & ANSWERS

### ANTIDEPRESSANTS' EFFECT ON TAMOXIFEN

Which antidepressants are important to be aware of with patients on tamoxifen (Nolvadex)?

*The principle behind using specific antidepressants with caution in patients taking tamoxifen is relative to the metabolite endoxifen, which has a significant role in the anticancer effects of tamoxifen and is metabolized via the CYP2D6 pathway. Certain antidepressants, which also metabolize through the CYP2D6 pathway, have the potential to inhibit the efficacy of tamoxifen if taken concomitantly. Limited data support the risks or benefits of utilizing strong CYP2D6 inhibitors with tamoxifen, but caution is highly recommended when strong CYP2D6 inhibitors such as fluoxetine, paroxetine, and bupropion are administered concomitantly with tamoxifen (Clin Oncol. 2011;6[2]:8) — Jiajoyce R. Conway, DNP, FNP-BC, NP-C*

### SMOKING WHILE ON CHEMOTHERAPY

What is the impact of nicotine use on the efficacy of chemotherapy? What information is important to discuss with patients who continue to smoke while on chemotherapy?

*Despite the many studies on the effects of tobacco carcinogens on apoptosis, the understanding of the true inhibition of nicotine remains limited. Smoke in general is a CYP450 1A2 substrate, meaning drugs that are metabolized through this pathway are required in higher concentrations to be effective if the person continues to smoke while on chemotherapy. Most studies examined the impact of nicotine and chemotherapy in lung cancer patients (Am J Respir Cell Mol Biol. 2009;40:135-146). Previous studies have determined that nicotine induces resistance to chemotherapy-induced apoptosis by modulating mitochondrial signaling. Inhibition of this signaling is crucial because many cancer therapies induce apoptosis via the mitochondrial pathway. Continued smoking contributes to tumor progression and resistance to therapy in lung cancer. High-affinity nicotine acetylcholine receptors are found both on cancerous and normal human lung cells. Therefore, nicotine inhibits apoptosis in various cell lines, suggesting that nicotine has the potential not only to promote lung cancer development by activating cell growth pathways, but also to reduce the efficacy of chemotherapeutic agents by stimulating survival pathways. Patients who continue to smoke throughout their chemotherapy treatment increase the risk of inhibiting many pathways, especially the mitochondrial pathway, that are important in the metabolism of their chemotherapeutic drugs, thus increasing the potential for limited response and ultimately disease progression. — Jiajoyce R. Conway, DNP, FNP-BC, NP-C ■*

DO YOU HAVE A QUESTION FOR OUR CONSULTANTS?

Send it to [editor.ona@haymarketmedia.com](mailto:editor.ona@haymarketmedia.com).