Single-agent paclitaxel and docetaxel are the most common first-line chemotherapy approaches in previously untreated patients in the first-line metastatic setting. Data presented at last year’s San Antonio Breast Cancer Symposium demonstrated improved efficacy with docetaxel compared to paclitaxel on every three-week schedule. Docetaxel is associated with a significant rate of febrile neutropenia when used at 100 mg/m², and a recent placebo-controlled randomized trial demonstrated that pegfilgrastim dramatically reduces the incidence of this complication. Nanoparticle paclitaxel appears to be as efficacious as docetaxel, but this agent does not require premedication and thus avoids secondary side effects and toxicity.

**Phase III Trial of Nanoparticle Paclitaxel (ABI-007) Versus Paclitaxel in Metastatic Breast Cancer**

**Eligibility**

- Stage 1-4 breast cancer; ECOG performance status of 0-1
- ≥18 years of age

**Outcomes**

- 225 patients in each arm
- 61% of patients on both arms were on chemotherapy for ≥12 months

**Phase III Trial of PEGFILGRASTIM Versus Placebo in Patients Receiving Docetaxel**

**Eligibility**

- Stage 1-4 breast cancer; ECOG performance status of 0-2
- ≥18 years of age

**Outcomes**

- 2,805 patients in seven Phase III trials
- The pivotal trial of nanoparticle paclitaxel in anthracycline-pretreated patients showed it to be as efficacious as docetaxel in terms of response rates. The Phase III trial demonstrated superior efficacy of nanoparticle paclitaxel 160 mg/m² versus paclitaxel 175 mg/m² in terms of response rate and time to progression. I believe in the next few years physicians will use nanoparticle paclitaxel for palliation in the metastatic setting in patients whom they want to experience as few side effects as possible. I expect it will be used weekly at 100 mg/m² for three weeks, followed by one week off, as in Joanna Blum’s study.

I have treated several patients with this agent and found it to be extremely well tolerated, particularly at the 100 mg/m² dose. I don’t premedicate patients receiving nanoparticle paclitaxel, because most patients on weekly taxanes do not have problems with hypersensitivity reactions. In addition, I find weekly dexamethasone is not well tolerated by patients — it leaves them and has a crash effect. Avoiding premedication may be one of the reasons we don’t see significant side effects with the nanoparticle paclitaxel.

**Nanoparticle Paclitaxel in the Metastatic Setting**

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**Trial Comparing Pegfilgrastim to Placebo in Patients Receiving Docetaxel**

The objective of this study was to determine if pegfilgrastim significantly reduces febrile neutropenia in patients receiving a chemotherapy regimen associated with an expected rate of approximately 20 percent. Eligible patients were the subject for the trial whether they were receiving docetaxel in the adjuvant or the metastatic setting. This double-blind, randomized trial, patients received docetaxel plus pegfilgrastim versus a placebo. If a patient developed febrile neutropenia, they were subsequently able to receive pegfilgrastim. Neutropenia-related hospitalizations and intra- pulmonary anti-infective use were all significantly reduced by pegfilgrastim. While the difference in the rates of patients receiving their planned chemotherapy dose on time doesn’t look impressive, all the placebo patients who developed febrile neutropenia received pegfilgrastim. Consequently, both groups experienced delivery of planned dose on time.

**— Charles L. Vogel, MD**

This study provides compelling evidence that administering pegfilgrastim in the first and subsequent cycles of moderately myelosuppressive chemotherapy can significantly reduce the risk of potentially life-threatening infections that can result in hospitalizations and require IV anti-infectives. Approximately 600,000 chemotherapy patients are at risk of developing febrile neutropenia, which has traditionally been treated by doctors. Usually patients proactively receive pegfilgrastim for only those patients considered at high risk of developing chemotherapy-induced neutropenia. This study may give physicians the evidence they need to help protect cancer patients from chemotherapy-induced neutropenia, complicating one of the most common side effects of chemotherapy treatment.

**— Lee Schwartzberg, MD**