Nab-paclitaxel is a valuable NSCLC therapy option

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The FDA recently widened the approved use of nanoparticle albumin bound (nab) paclitaxel (nab-paclitaxel) to include first-line treatment for non–small-cell lung cancer (NSCLC), in combination with carboplatin. This approval was based on results of a global, phase 3 randomized trial conducted by Socinski et al that compared the use of nab-paclitaxel and solvent-based paclitaxel injection in combination with carboplatin as first-line treatment of advanced NSCLC.[1] Taxanes are the most widely used chemotherapeutic agents in solid tumor oncology. Paclitaxel and docetaxel are effective in the treatment of NSCLC and are frequently used for adjuvant therapy after resection, in combination with radiation for locally advanced disease and for treatment of patients with advanced disease. They are usually used in combination with platinum agents or as single-agent therapy in the relapsed refractory setting. Paclitaxel and docetaxel require synthetic solvents for intravenous administration, which can cause life-threatening allergic reactions and significant toxicity. Nab-paclitaxel is a novel, solvent-free formulation of paclitaxel, which can be administered without the need for steroid and antihistamine premedication. Furthermore, nab-paclitaxel delivers high concentrations of the drug's active ingredient into the cancer cell with a reduced incidence of side effects compared with the solvent-based formulation.

As summarized in the Community Translations article on page 166, the administration of nab-paclitaxel as first-line therapy in combination with carboplatin was efficacious and resulted in a significantly improved overall response rate (ORR), compared with paclitaxel (33% vs 25%, respectively; response rate ratio [RRR], 1.313; 95% CI, 1.082-1.593; $P = .005$), and it achieved the study's primary end point. Of note, ORR was significantly greater with nab-paclitaxel in patients with squamous cell histology (41% vs 24%; RRR, 1.680; $P < .001$), with no difference between treatments being observed in patients with nonsquamous histology (ORR, 26% vs 25%) or adenocarcinoma (ORR, 26% vs 27%). There was no difference in PFS or survival between the 2 arms.

Treatment of elderly patients with NSCLC poses a significant therapeutic challenge because of numerous pre-existing comorbidities in that population, their often poor performance status, and the increased risk of chemotherapy toxicities. For the elderly, schedule of administration of chemotherapy may make a difference. Weekly paclitaxel in combination with carboplatin was shown to be superior to single-agent therapy and tolerable in elderly patients in an age-specific, large phase 3 trial (IFCT 0501).[2] The results of an elderly subgroup analysis from a trial by Belani et al in which patients were randomized to a standard regimen of paclitaxel and carboplatin every 3 weeks or to weekly paclitaxel and carboplatin, showed that the efficacy was similar between the weekly and standard regimen (136 patients, 31% aged ≥ 70 years).[3] On the basis of those data, this regimen of weekly paclitaxel has been favored by some oncologists for treatment of elderly patients, because of the ability to stop treatment mid-cycle and withhold subsequent weekly doses in the event of toxicity.

In a subset analysis reported by Socinksi et al, survival for the nab-paclitaxel arm was significantly longer in the subset of patients aged 70 years or older (median OS, 19.9 vs 10.4 months).[4] The results for the elderly subset analysis from this trial are especially intriguing. Whether this potential benefit is due to the effect of nab-paclitaxel or its weekly schedule remains to be answered.

Toxicity profile with nab-paclitaxel has also been reported by both patients and physicians to be favorable. Patients on this trial were assessed with the FACT-Taxane scale before each cycle. Patient-reported neuropathy, neuropathic pain in the hands and feet, and hearing loss were significantly less for patients who were treated with nab-paclitaxel compared with those treated with paclitaxel. Physician assessments of neuropathy outcomes were consistent with patient-reported outcomes.

Unfortunately, since this is a newer formulation, and no generic version is yet available, it is considerably more

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expensive than generic paclitaxel. Nevertheless, therapy with nab-paclitaxel has been reported to be safe and tolerable. Shorter infusion time and lack of need of steroid premedication make it an attractive alternative for patients and providers alike. It represents a valuable treatment choice, especially for elderly patients and for patients with squamous NSCLC, where it minimizes toxicity and maximizes efficacy.

References

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