Nursing Considerations for Administering Pemetrexed (Alimta®) in Combination With Cisplatin for Malignant Pleural Mesothelioma

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Malignant pleural mesothelioma (MPM) is an aggressive, highly lethal neoplastic disorder of the pleural lining of the lung associated with exposure to asbestos. In the United States, about 2,000–3,000 new cases of MPM are diagnosed annually (Carbone, Kratzke, & Testa, 2002). The prognosis is dismal, with a five-year overall survival rate of about 8% in the United States (Verschraegen, 2003).

Unfortunately, MPM generally presents at an advanced stage, and the prognosis is quite poor. Median survival is brief, about 6–18 months (Carbone et al., 2002). Available treatment options include surgery, radiotherapy, and chemotherapy. Few patients, however, are candidates for surgery or radiotherapy, so chemotherapy is the only option for most patients. A phase III study found that pemetrexed and cisplatin chemotherapy significantly improved survival and had greater antitumor activity than cisplatin alone. The U.S. Food and Drug Administration recently approved pemetrexed with cisplatin for treating MPM. Nurses should become familiar with the proper preparation and administration of pemetrexed, including the necessity of supplementation with folic acid and vitamin B12. As with all drugs, careful attention must be paid to patient selection, laboratory monitoring, contraindications, and appropriate interventions in the event of adverse reactions or overdose.

Key Words: mesothelioma, antineoplastic combined chemotherapy protocols

No known cure exists for malignant pleural mesothelioma (MPM). The prognosis for patients with this relatively rare, asbestos-related malignancy of the pleural lining of the lung is quite poor. MPM treatment includes surgery, radiotherapy, and chemotherapy. Few patients, however, are candidates for surgery or radiotherapy, so chemotherapy is the only option for most patients. A phase III study found that pemetrexed and cisplatin chemotherapy significantly improved survival and had greater antitumor activity than cisplatin alone. The U.S. Food and Drug Administration recently approved pemetrexed with cisplatin for treating MPM. Nurses should become familiar with the proper preparation and administration of pemetrexed, including the necessity of supplementation with folic acid and vitamin B12. As with all drugs, careful attention must be paid to patient selection, laboratory monitoring, contraindications, and appropriate interventions in the event of adverse reactions or overdose.

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Unsatisfactory results with conventional agents prompted increased research using newer agents with novel mechanisms of action. Perhaps the most significant new development in the treatment of MPM is the recent approval by the U.S. Food and Drug Administration (FDA) of pemetrexed (Alimta® [Eli Lilly and Company, Indianapolis, IN]), a novel multitargeted antifolate, in combination with cisplatin for front-line treatment of MPM.

Pemetrexed represents a significant advance in the treatment of MPM. Subsequent to demonstrating modest single-agent activity (response rate 14.1%; median overall survival 10.7 months) in a phase II trial of 64 patients with MPM (Scagliotti et al., 2003), pemetrexed, in combination with cisplatin, demonstrated significantly improved survival and...