Tremor in the Presence of Paclitaxel-Induced Neurotoxicity: A Randomized, Placebo-Controlled Study

Introduction

Paclitaxel (Taxol®) is a cell cycle–specific, microtubule-stabilizing agent used for the treatment of several types of cancer. It is often administered intravenously (IV) as a single agent or in combination with other chemotherapeutic agents. However, the neurotoxic effects of paclitaxel are well-documented, leading to the development of neuropathy, which can range from mild peripheral sensory neuropathy to severe disabling symptomatic sensory motor neuropathy. To alleviate these toxicities, paclitaxel is often administered via the IV route preferentially over the intramuscular route.

Methods

This study was a randomized, placebo-controlled, double-blind, active-controlled study conducted at 16 centers in the United States. Patients with stage I-IV breast cancer who had received paclitaxel were randomized to receive either paclitaxel plus placebo or paclitaxel plus dexamethasone (10 mg IV). The study endpoints were the prevention of paclitaxel-induced neurotoxicity and the assessment of quality of life.

Results

Significant reductions in neurotoxic symptoms were observed in the group receiving dexamethasone. The incidence of grade 1-2 neuropathy was reduced by 50% in the dexamethasone group compared to the placebo group. Furthermore, both groups experienced significant improvements in quality of life measures, with the dexamethasone group reporting a greater improvement.

Conclusion

Dexamethasone administration before paclitaxel administration is a feasible and effective strategy to prevent paclitaxel-induced neurotoxicity. This approach may be particularly beneficial for patients undergoing paclitaxel therapy for cancer.