GS03-2 Effects of renin-angiotensin system inhibitors on anticancer drugs-induced peripheral neuropathy

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Oxaliplatin, paclitaxel, and vincristine are representative anticancer drugs, which induce a peripheral neuropathy. Our previous study demonstrated that inhibition of renin-angiotensin system (RAS) may suppress a neuropathy induced by the treatment with anticancer drug. Therefore, we validated whether RAS inhibitors prevent the anticancer drug-induced neuropathy.

We retrospectively analyzed big data reported to U.S. Food and Drug Administration Adverse Event Reporting System (FAERS) from October 2010 to July 2015, including cancer patients, who received chemotherapy with oxaliplatin, paclitaxel, or vincristine, and were treated with or without RAS inhibitors. Additionally, a retrospective observational study was also carried out at Ehime University Hospital using data from electronic medical records of patients, who had more than one cycle of oxaliplatin-based regimens from May 2009 to December 2016.

In FAERS analysis, the RAS inhibitor group significantly decreased the onset of neurotoxicity. In the data analysis of Ehime University Hospital, the estimated incidence of peripheral neuropathy in the RAS and non-RAS inhibitor groups were 36.9% and 91.7%, respectively (log-rank test: $P = 0.067$). The multivariate analysis using a Cox proportional hazards model revealed that the RAS inhibitor group was related to a significant decreased risk of neurotoxicity (adjusted hazard ratio: 0.47, 95% confidence interval: 0.19-0.99; $P = 0.048$).