In breast cancer patients on a fluorouracil-epirubicin (EPI)-cyclophosphamide (FEC) regimen and intravenous fosaprepitant (FAP) during chemotherapy, infusion-site adverse events such as vascular pain and induration and/or phlebitis are observed.” Yamasaki et al (2019).

Abstract:

In breast cancer patients on a fluorouracil-epirubicin (EPI)-cyclophosphamide (FEC) regimen and intravenous fosaprepitant (FAP) during chemotherapy, infusion-site adverse events such as vascular pain and induration and/or phlebitis are observed. In the present study, adverse events induced by the FEC regimen and FAP, a prodrug of aprepitant (AP), were studied based on the vascular tissue distribution of EPI in rats. Rats were treated with intravenous FAP (3 mg/kg, 10 min-constant rate infusion) or oral AP (3 mg/kg) and then intravenous EPI (1 mg/kg, 5 min-constant rate infusion) as follows: FAP-S Group, FAP and then EPI was infused from the same site on the jugular vein; FAP-D Group, FAP and then EPI was infused from different jugular veins (left and right); and AP Group, AP was administered orally and EPI was infused from the jugular vein. Concentrations of EPI in vascular tissue at the EPI infusion sites and opposite sites of the jugular vein (left and right, respectively) were measured at 30 min and 24 h after EPI infusion. Histological observation of the EPI infusion site was also made separately. In rats, the tissue concentrations of EPI at the infusion site in the FAP-S group were higher than those in the FAP-D and AP groups. Inflammation and necrosis were observed at the EPI infusion-site vascular tissue of the FAP-S group, but not of the FAP-D and AP groups. These findings could aid the development of an approach to avoid infusion-site adverse events in anthracycline-based chemotherapy in the clinical practice.

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