
Different modes of action of two hypoxia-inducible factor prolyl hydroxylase (HIF-PH) inhibitors, roxadustat (Rox) and daprodustat (Dap), in the treatment of anemia in hemodialysis (HD) patients.

Nagasaki Kidney Center

○Satoshi Funakoshi, Kenji Sawase, Kousei Yamaguchi, Hideyuki Tomura, Takashi Harada

Several types of HIF-PH inhibitors are now available for the treatment of anemia in HD patients, but there are no reports comparing each drug so far. In this study the effects of two HIF-PH inhibitors with separate launch dates in Japan, Rox and Dap, on anemia were compared in HD patients at a single institution.

To determine hematopoietic effect and iron metabolism of Rox and Dap, this study involved 64 HD patients who were initially treated with epoetin alfa (EPO), and then switched to Rox on January of 2020. Then, 61 patients were also converted from EPO to daprodustat (Dap) on September of 2020. We measured erythrocyte and iron-related factors at every two weeks after the treatment switch.

As shown in Figure, in the Rox group treated three times a week at a dose of 100 mg, Hb levels significantly increased early after administration, whereas Dap group treated daily dose of 6 mg, no such early and rapid increase of Hb levels was observed. Total iron binding capacity (TIBC) values were significantly increased in both drugs, and transferrin saturation (TSAT) levels significantly increased in Rox but not Dap.

These results suggest that Rox may promote faster hematopoiesis by improving iron metabolism earlier than Dap after administration.