

## Abstract Submission No.: A-0656

### Rapid increase in ESA resistance is a risk factor of poor renal prognosis in pre-dialysis CKD patients. BRIGHTEN STUDY sub-analysis

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**Objectives :** ESA resistance has been reported to be a risk factor for mortality in maintenance dialysis patients. In non-dialysis CKD patients, BRIGHTEN study (1724 Japanese patients) revealed ESA resistance associated with a risk factor for not only mortality but also renal prognosis. ESA resistance increases with the progression of CKD, predicting renal prognosis based on a single point of ESA resistance is insufficient.

**Methods :** In BRIGHTEN study, 1625 patients with complete data were included in subanalysis of renal events, including 517 cases of dialysis initiation and 18 cases of kidney transplantation during a mean observation period of 3.5 years. The onset relationships were analyzed with joint latent class models for longitudinal and time-to event data. The Kaplan-Meier method was used to estimate renal survival curves for each ERI transition pattern. The patient background in each class was compared.

**Results :** ESA resistance index (ERI-1B: DA dose/Hb) transition pattern was divided into 3 classes: ERI unchanged Class A (1237 patients), moderately increased Class B (274 patients), and rapidly increased Class C (114 patients). Class C showed significant poor renal survival curve in 3 groups, and Class B showed intermediate ( $P < 0.0001$ ). The median renal survival time was 1.09 years in Class B, and 0.61 years in Class C. Class B and C had significant higher rates of males, diabetic nephropathy, smoking, hypertension, and ischemic heart disease complications and more proteinuria than class A.

**Conclusions :** In pre dialysis CKD patients, BRIGHTEN study was the largest study and found that reduced initial responsiveness to ESA was a risk factor for cardio-renal outcomes. In this sub-analysis, even if the initial response is good, rapidly increased ESA resistance during the course of CKD indicates poor renal prognosis. Rapidly increased pattern of ESA resistance is a predictor of poor renal prognosis in pre-dialysis CKD.