Introduction:
Patients with sepsis frequently develop delirium during their intensive care unit (ICU) stay, which is associated with increased morbidity and mortality. The prediction model for delirium in ICU patients (PRE-DELIRIC model) was developed to facilitate the effective preventive strategy of delirium [1]. However, the PRE-DELIRIC model has not yet been validated enough outside Europe and Australia. The aim of this study is to examine the external validity of the PRE-DELIRIC model to predict delirium using Japanese cohort.

Methods:
This study is a post hoc subanalysis using the dataset from previous study in nine Japanese ICUs, which have evaluated the sedative strategy with and without dexmedetomidine in adult mechanically ventilated patients with sepsis [2]. These patients were assessed daily throughout ICU stay using Confusion Assessment Method-ICU. We excluded patients who were delirious at the first day of ICU, were under sustained coma throughout ICU stay and stayed ICU less than 24 h. We evaluated the predictive ability of the PRE-DELIRIC model to measure the area under the operating characteristic curve. Calibration was assessed graphically.

Results:
Of the 201 patients enrolled in the original study, we analyzed 158 patients in this study. The mean age was 69.4 ± 14.0 years and 99 patients (63%) were male. Delirium occurred at least once during their ICU stay in 63 patients (40%). To predict delirium, the area under the receiver operating characteristics curve of the PRE-DELIRIC model was 0.60 (0.50 to 0.69). Graphically, the prediction model was not well-calibrated (Figure).

Conclusion:
To predict delirium in Japanese ICUs, we could not show the well discrimination and calibration of the PRE-DELIRIC model in mechanically ventilated patients with sepsis.

References:
Observed and expected incidence of delirium