

Category :**Sedation - analgesia**

A50 - Effect of ramelteon on reducing in-hospital mortality in critically ill adults: a nationwide observational cohort study in japan

T Takeuchi¹; N Inoue¹; T Masuda²; K Fushimi¹

¹Tokyo Medical and Dental University, Department of Health Policy and Informatics, Tokyo, Japan, ²Tokyo Medical and Dental University, Department of Intensive Care Medicine, Tokyo, Japan

Introduction:

Delirium is a common complication in intensive care units (ICU) and is considered to be an independent risk factor for mortality [1]. Some studies have attempted to show preventative effects of pharmacological treatments including ramelteon, melatonin receptor agonists, but none have been proven to improve major outcomes [2]. Recent small studies reported that ramelteon may prevent critically ill patients from developing delirium [3], but the data are limited and the effect of ramelteon on mortality is still unknown. Our aim is to determine whether ramelteon reduces mortality in critically ill adults.

Methods:

We conducted a cohort study using the Diagnosis Procedure Combination database in Japan. We enrolled adult patients admitted to the ICU from April 2018 to March 2021 in Japan. We excluded patients who were admitted to the ICU after 48 hours of hospital admission and were discharged or died within 2 days of ICU admission. After multiple imputation (MI) for missing values, propensity score (PS)-based fine stratification weighting (FSW) analysis was performed to compare in-hospital mortality between patients who were administered ramelteon within 48 hours of admission (ramelteon group) and those who did not (control group).

Results:

Of 39,869 ICU patients, 1,755 were in the ramelteon group and 38,144 were in the control group. After MI, PS-based FSW improved the balance of background factors between the two groups. Administration of ramelteon was associated with decreased days of haloperidol use (-0.101 days; 95% CI, -0.190 to -0.012) and reducing in-hospital mortality (10.2% vs 12.0%; Odds Ratio 0.832; 95% CI, 0.695 to 0.996).

Conclusion:

For critically ill adults, treatment with ramelteon within 48 hours of admission was associated with reducing days of haloperidol use and in-hospital mortality.

References:

1. Balas MC, et al. Chest. 2009;135(1):18-25.
2. JW Devlin et al. Crit Care Med. 2018; 46(9):e825-e873.
3. Nishikimi M et al. Crit Care Med. 2018;46(7):1099-1105.