Ticagrelor monotherapy vs clopidogrel monotherapy in patients with acute coronary syndrome undergoing percutaneous coronary intervention

W. Feng[1], P.W. Chen[2], M.Y. Ho[3], C.H. Su[4], S.W. Huang[4], C.W. Cheng[5], H.I. Yeh[5], C.P. Chen[6], W.C. Huang[7], C.C. Fang[8], H.W. Lin[9], S.H. Lin[9], I.C. Hsieh[3], Y.H. Li[2]

[1]*Kaohsiung Medical University Hospital, Cardiology, Kaohsiung, Taiwan;* [2]*National Cheng Kung University Hospital, Cardiology, Tainan, Taiwan;* [3]*Linkou Chang Gung Memorial Hospital, Cardiology, Tao-Yuan, Taiwan;* [4]*Chung Shan Medical University Hospital, Cardiology, Taichung, Taiwan;* [5]*Mackay Memorial Hospital, Cardiology, Taipei, Taiwan;* [6]*Changhua Christian Hospital, Cardiology, Changhua, Taiwan;* [7]*Kaohsiung Veterans General Hospital, Cardiology, Kaohsiung, Taiwan;* [8]*Tainan Municipal Hospital, Cardiology, Tainan, Taiwan;* [9]*National Cheng Kung University, Tainan, Taiwan*

Background: P2Y12 inhibitor monotherapy with either clopidogrel or ticagrelor becomes an alternative antiplatelet strategy in patients (pts) undergoing percutaneous coronary intervention (PCI). The purpose of this study was to compare the efficacy and safety of clopidogrel vs. ticagrelor monotherapy in pts with acute coronary syndrome (ACS) undergoing PCI who cannot tolerate aspirin.

Methods and results: From January 1, 2014 to December 31, 2018, a total of 610 ACS pts (mean age 70.4±13.1 years, 72.1% men, 28.5% STEMI) that aspirin was stopped prematurely for various reasons and received either clopidogrel (n=369) or ticagrelor (n=241) monotherapy were included from 8 major hospitals in Taiwan. The duration (median and the 25th and 75th percentile) of aspirin treatment was 9 (1.39–37.00) days in the clopidogrel group and 10 (1.00–55.00) days in the ticagrelor group (p=0.514). Gastrointestinal bleeding (36.9%) was the most common reason to stop aspirin in both groups. The primary endpoint is the composite of all-cause mortality, recurrent ACS or unplanned revascularization, and stroke within 12 months after discharge. The safety endpoint was the major bleeding

defined as BARC 3 or 5 bleedings. The covariates were balanced between groups after using inverse probability of treatment weighting. Overall, 84 patients developed events of primary endpoint, with 57 (15.4%) in the clopidogrel group and 27 (11.2%) in the ticagrelor group. After multivariate adjustment in the Cox proportional-hazards models, ticagrelor was associated with a lower risk of primary endpoint compared with clopidogrel (adjusted hazard ratio [aHR] 0.67, 95% CI 0.49–0.93). Among the primary endpoint, ticagrelor significantly reduced the risk of recurrent ACS or unplanned revascularization (aHR 0.46, 95% CI 0.28–0.75). There was no significant difference of all-cause mortality between the 2 groups (aHR 0.92, 95% CI 0.52–1.61). The risk of BARC 3 or 5 bleeding was also similar (aHR 0.71, 95% CI 0.35–1.45).

Conclusions: Among ACS patients undergoing PCI who cannot tolerate aspirin, ticagrelor monotherapy was associated with a significantly lower risk of a composite of cardiovascular events compared to clopidogrel monotherapy. The major bleeding risk was similar between groups.