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Bleeding in patients undergoing urgent cardiac surgery during dual anti platelet therapy

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Background Despite recommendations for standardized preoperative waiting of at least 3, 5, and 7 days for ticagrelor, clopidogrel, and prasugrel, respectively, there is still substantial inter-institutional variation in preoperative discontinuation of dual antiplatelet therapy in patients needing coronary artery bypass grafting (CABG). Methods In 299 patients undergoing CABG ± valve intervention <7 days after last P2Y12 receptor inhibition, we evaluated calculated red blood cell loss. and Bleeding Academic Research Consortium (BARC)-4 bleeding. Results 83% of patients underwent CABG within <48 hours of last drug intake. Calculated blood loss was lower in patients on clopidogrel as compared to prasugrel or ticagrelor [1063 (690-1394) vs. 1351 (876-1829) vs. 1330 (994-1691) ml, p<0.001]. Overall, 135 (45%) patients sustained BARC-4 bleeding; incidence differed between groups (p=0.015) and was significantly higher in prasugrel-, as compared to clopidogrel-treated patients. In multivariable linear regression analysis, EuroSCORE II, aspirin dose, cardio-pulmonary-bypass time, drug withdrawal time, and type of P2Y12 receptor inhibitor were significantly associated with RBC loss. Compared to 0-24, >48 hours preoperative discontinuation substantially reduced calculated blood loss by 37-48% und BARC-4 bleeding by 58- 71%, depending on P2Y12 receptor inhibitor. Conclusions Exposure to prasugrel and ticagrelor within 24 hours before CABG increases both calculated blood loss and BARC-4 bleeding as compared to clopidogrel. Although a >48 hours discontinuation substantially reduced calculated blood loss and BARC-4 bleeding across all P2Y12 receptor inhibitors, our single center data further support strict adherence to the 2017 guidelines whenever justified by stable hemodynamics and non-jeopardized myocardium.