LETTER TO THE EDITOR

European NSTEMI guidelines—return of clopidogrel?

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Keywords · Academic Research Consortium · Clopidogrel · DAPT · High bleeding risk

Abbreviations

ACS  Acute coronary syndrome
ARC  Academic Research Consortium
CKD  Chronic kidney disease
DAPT  Dual antiplatelet medication
HBR  High bleeding risk
PCI  Percutaneous coronary intervention
PD  PRECISE-DAPT

Stent thrombosis and re-infarction are disastrous complications after acute myocardial infarction. During the last decade, potent P2Y12 inhibitors like prasugrel/ticagrelor and extended duration of dual antiplatelet therapy (DAPT) substantially reduced recurrent ischemic events. However, the novel European NSTEMI guidelines emphasize rigorous de-escalation of DAPT in patients with NSTEMI at “high bleeding risk” [1]. Definition of “high bleeding risk” is extremely challenging. In this study, we investigated how many patients would be de-escalated to 3 months of aspirin and clopidogrel according to the emphasized “high bleeding risk” algorithm in the ESC NSTEMI guidelines in a real-life cohort (Table 1).

We conducted a retrospective all-comers analysis of 973 NSTEMI patients that underwent percutaneous coronary intervention (PCI) from April 2015 to May 2016. The current DAPT regime was based on clopidogrel for chronic coronary syndrome patients and in combination with oral anticoagulation. Prasugrel and ticagrelor were used in acute coronary syndrome. 22.6% of patients were on triple therapy, 48.2% had 12 months DAPT, 24.1% 6 months DAPT, and 5.1% one to 3 months DAPT. In this cohort, 492 patients (51%) of patients had “high bleeding risk” according to the Academic Research Consortium (ARC) algorithm and 470 (47.3%) according to the PRECISE-DAPT (PD-Score) definition.

The major finding of this study is that, according to the recommendation of the novel European guidelines, more than 50% of NSTEMI patients would be de-escalated to aspirin and clopidogrel for 3 months. This was surprising as limitations of clopidogrel are well known. Hence, more potent P2Y12 inhibitors (prasugrel/ticagrelor) were able to substantially reduce stent thrombosis and re-infarction. In contrast, bleeding was increased. Nevertheless, net clinical benefit was superior for both ticagrelor and prasugrel in comparison to clopidogrel [2, 3].

As mentioned above, detection of “high bleeding risk” is complex. The novel European NSTEMI guidelines emphasized the ARC score. This score includes age, kidney function, non-steroidal anti-inflammatory drugs, and history of stroke among others. Moreover, PD Score is used, depending on hemoglobin and leukocyte levels, age, kidney function, and prior bleeding [4]. However, most parameters predict ischemic events as well. This is in line with a recent evaluation of the ARC “high bleeding risk” definition in post-PCI patients [5]. Moreover, practical usefulness in clinical routine is questionable as not every parameter might be available for every patient. In comparison, the American DAPT guidelines recommend decision for de-escalation and shortening of DAPT down to 6 months on an individual basis integrating clinical judgment, balancing benefit/risk ratio, and patient’s preference without any specific scoring system [6].
In the current analysis, 205 out of the 492 patients with HBR according to ARC definition have an anticipated use of long-term oral anticoagulation as prediction criteria. According to the guidelines for patients with atrial fibrillation, triple therapy is just terminated after one week followed by single antiplatelet treatment combined with oral anticoagulation. Hence, the patients are not considered to receive DAPT for a longer period at all. With the view to DAPT cessation, it might be reasonable to exclude anticoagulation as parameter for HBR determination.

In summary, according to the novel ESC guidelines, more than 50% of NSTEMI patients would receive 3 months of dual antiplatelet therapy with aspirin and clopidogrel. However, it is important to note that this holds potential for an increased ischemic risk, particularly if performed early (< 30 days) after the index event. Large-scale trials are needed to assess the implementation of the novel guidelines to clinical practice and outcome of patients.

Author contribution L.D., D.M., and M.P. designed the study, collected data, analyzed and interpreted data, and wrote the manuscript. T.P., T.Z., M.K., and A.P. supervised the study and revised the manuscript.

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Declarations

Ethics vote The study goes in line with the declaration of Helsinki and was approved by the ethics committee of Heinrich-Heine university of Düsseldorf.

Ethics committee approval The study conformed to the Declaration of Helsinki and was approved by the University of Düsseldorf Ethics Committee (vote no. 2018–2022).

Conflict of interest The authors declare no competing interests.

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