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Editorial

Importance of guideline-adherent secondary prevention post-acute coronary-syndromes: The importance of patient uptake and persistence

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Despite significant improvements over the last two decades in the acute management of patients presenting with acute coronary syndromes (ACS) with the widespread adoption of primary percutaneous coronary intervention, long-term management remains challenging(1). The morbidity burden after ACS is high, as around 20% of survivors experience a subsequent cardiovascular event (recurrent myocardial infarction, stroke or cardiovascular death) during the first 24 months (2) and total mortality rates vary between 19- 22% by 5 years of follow-up (3). Residual cardiovascular risk and high rates of recurrent events generally lead to poor long-term prognosis (4).

Thus, adequate secondary prevention after ACS is crucial in order to prevent further cardiovascular events, disease progression and death, and to improve length and quality of life. Current European guidelines recommend long-term secondary prevention through optimised pharmacological treatments with anti-thrombotic drugs, beta-blockers, lipid-lowering therapy, renin-angiotensin system inhibitors, and comprehensive lifestyle interventions with risk factor management and cardiac rehabilitation (5)(6).

Since adherence to long-term evidence-based therapies among cardiovascular patients is generally poor (7), implementation of innovative strategies, multidisciplinary approaches that may enhance adherence and identification of patients with high risk of non-adherence should be a priority (8). When investigating the persistence with secondary prevention medication in the TRANSLATE-ACS study (prospective observational multicenter study), nearly one-third of the 7955 patients discontinued the prescribed medication by 6 months after ACS (9).

In this issue of the journal, Frederiksen *et al.* (10) report their findings from a large, nationwide population-based study, which assessed ethnic differences in the use of preventive pharmacological treatment and non-pharmacological interventions among survivors of ACS by comparing migrants and to Danish-born citizens. From the Danish national registries, they identified 33199 patients, who were discharged from hospital following ACS during 2010-2014, and examined the initiation rates and time to discontinuation of secondary preventive medications, in addition to participation in cardiac rehabilitation programs, determined by number of contacts for the interventions during a 180-days follow-up. They found significantly lower initiation rates of both pharmaceutical treatment and lifestyle interventions in non-Western migrants (Turks and Pakistanis) compared to Danish-born citizens, whereas Western migrants did not differ significantly from those Danish-born. The risk of therapy discontinuation was found to be significantly higher for all medication groups in non-Western migrants compared to those Danish-born. For non-pharmacological interventions, all migrant subgroups showed statistically lower participation.

The study by Frederiksen *et al*. has many positive aspects, including a large cohort size, statistical power and a comprehensive assessment on the use of both pharmacological and lifestyle changing interventional measures. Their findings are some of the first European real-world data on treatment adherence and persistence with secondary prevention post-ACS among migrants, shifting the focus on the causative factors and possible interventional strategies that may enhance patient adherence. Nevertheless, as with most observational studies based on administrative data, there are several limitations that should be recognized (11). For example, there are no data about follow-up visits or monitoring; no evidence about post-discharge

evolution of the disease or treatment-associated complications; new-onset disease(s) which may explain possible contraindications to secondary prevention treatment; no information about patient education and psychological adaptation; or bias and residual confounders from comorbidities.

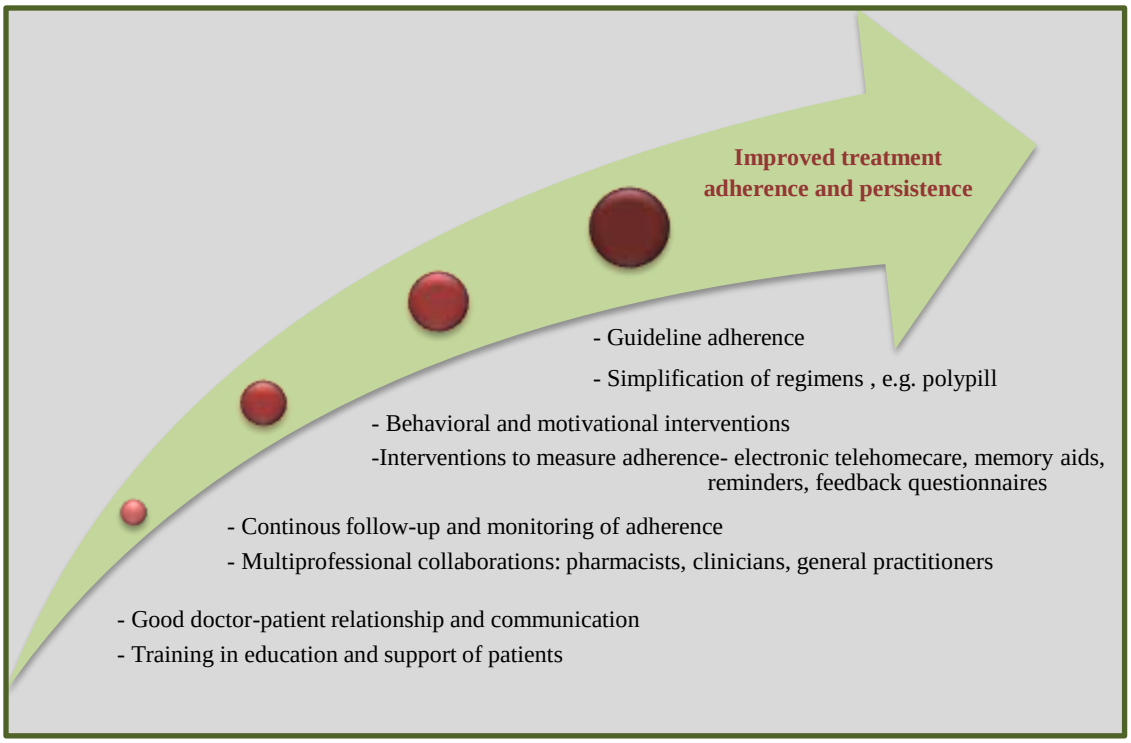
These finding serve as a reminder that due to mass immigration and significant demographic changes in populations, healthcare systems throughout Europe need to adapt and some ethnic groups may require closer attention and/or specific interventions for both primary and secondary prevention of ACS. The reasons for the differences in treatment initiation and persistence, and participation in non-pharmacological interventions, requires further exploration. It is not possible to ascertain from the nationwide registries if migrants were less likely to be prescribed non-pharmacological lifestyle interventions due to physician-perceived barriers or patient refusal. In the present study (10) Non-Western migrants had less formal education compared to Danish-born citizens and this, along with possible language barriers and socioeconomic factors (i.e., availability of disposable income to participate in required lifestyle changes, healthier food options, access to leisure/exercise facilities, ability to take time off work to attend cardiac rehabilitation (non-Western migrants were of working age), financial contribution to medication (as only part-coverage, etc.) may have contributed to the lower rates of initiation and adherence to secondary prevention among non-Western migrants. Language barriers significantly impair the ability of healthcare professionals to impart patient education and explain the necessity of medication and lifestyle change to patients. Understanding the reasons for the reported differences is important to target interventions appropriately; it may be more beneficial to target public health interventions, for primary and secondary prevention, at the whole Danish

population rather than focusing resources specifically on one group (migrants) but it may be that group-specific interventions are required.

In contrast, real-world data about adherence and persistence to treatments in other chronic conditions, such as oral anticoagulation for stroke prevention in atrial fibrillation (AF), are more variable. High early vitamin K antagonist (VKA) discontinuation rates in some vulnerable patient groups (e.g. elderly, cardiovascular and malignant comorbidities, renal failure) still remain an area of concern, as cessation has been associated with poor clinical outcomes (12). In the era of non-vitamin K oral anticoagulants (NOACs), guideline adherence has improved significantly leading to higher therapy persistence with NOACs than VKA, when compared in a large British cohort of anticoagulation-naïve patients with non-valvular AF (13). Thus, emphasises the importance of patient education and proposes a well-structured follow-up system, which may serve as a practical model for implementation of, and to, improve cardiovascular treatment adherence in other fields (14).

For future considerations, it is essential to identify health-system related difficulties and weaknesses in the management and support of secondary prevention post-ACS discharge, but also socioeconomic- and patient-related factors including education level, language barriers, immigrant status, financial concerns should be taken into consideration to optimise treatment adherence [Figure]. Proper utilization and adherence to evidence-based treatment strategies and interventions has to be the priority after acute coronary syndromes in order to improve long-term outcomes.

Figure 1. Strategies to improve patients' treatment adherence and persistence



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