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BCS Editorial

The first ESC cardio-oncology guidelines: Key messages for prevention of bleeding and thromboembolic events in cancer patients

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Take Home Messages

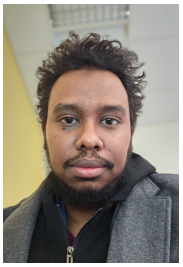
- While PCI has not demonstrated a mortality benefit in cancer patients with NSTEMI compared with optimal medical therapy, immediate coronary angiography and percutaneous coronary intervention are recommended in STEMI if cancer prognosis is ≥6 months or in acute complications of acute coronary syndrome (ACS).
- Aspirin and clopidogrel are the preferred dual antiplatelet regime in ACS for the shortest duration possible.
- Non-vitamin K oral anticoagulants are preferred to vitamin K antagonists and low molecular weight heparin for therapeutic anticoagulation of atrial fibrillation.

Introduction

Management of cardiovascular diseases in cancer patients is complex and challenging (1,2). Patients with cancer are at increased risk of cardiac diseases due to the shared cardiovascular risk factors, cardiovascular toxicity of cancer therapy, along with the proinflammatory and prothrombotic state caused by cancer (3–5). Stratification of the risk of bleeding and thrombosis in cancer patients can be a dilemma to health professionals as the traditional risk scores are not validated in cancer patients (2,6). In order to help professionals adopt the best management approach for cancer patients, the European Society of Cardiology (ESC) published the long-awaited first ESC Guidelines on cardio-oncology (7). The guidelines provide recommendations regarding diagnosis and management of acute and subacute cardiovascular toxicity in patients receiving anticancer treatment, and prevention and monitoring of cardiovascular complications during cancer therapy. The present editorial focuses on the key messages for prevention of bleeding and thromboembolic events in cancer patients from the first ESC cardio-oncology guidelines that can be frequently encountered during daily acute cardiovascular care particularly in patients presenting with acute coronary syndrome (ACS) and atrial fibrillation (AF).

About the author

Mohamed Dafaalla is an academic cardiology specialty trainee at West Midlands deanery. He has an MSc in molecular medicine and is currently a PhD candidate at Keele University. He is a data analyst and has multiple publications related to outcomes of acute coronary syndrome. His PhD focuses on short and long term outcomes of acute coronary syndrome in cancer patients.



Acute coronary syndrome

The balance of the bleeding and thrombosis risk is of paramount importance in cancer patients presenting with ACS. The ESC guidelines recommend that the diagnosis of ACS should be based on the same principles as in patients without cancer. Cancer therapy should be temporarily withheld and a multidisciplinary approach for individualized management is indicated. Similar to patients without cancer, cancer patients should be admitted to a monitored unit and receive appropriate anti-ischemic and antithrombotic therapy if not contraindicated. While PCI has not demonstrated a mortality benefit in NSTEMI patients compared with optimal medical therapy, immediate coronary angiography and percutaneous coronary intervention (PCI) is recommended in STEMI if cancer prognosis is ≥6 months or if they have acute complications of ACS (ie. cardiogenic shock, pulmonary oedema, ventricular tachyarrhythmias) where PCI offers palliation of symptoms. Third-generation drug-eluting stents are the preferred type of stents because of the lower risk of in-stent thrombosis. Plain old balloon angioplasty is associated with worse outcome and should only be used in case of severe thrombocytopenia or need for urgent surgery.

Aspirin and clopidogrel (instead of newer P2Y12 antagonists) are the preferred dual antiplatelet therapy (DAPT) due to a potentially higher bleeding risk in cancer patients (especially in patients with active gastrointestinal cancer). The DAPT duration should be as short as possible (1-3 months). If anticoagulation is required, a non vitamin K oral anticoagulant (NOAC) and single oral antiplatelet (preferably clopidogrel) is the preferred strategy after a short period of triple antithrombotic therapy (up to 1 week in hospital).

Coronary artery bypass graft (CABG) surgery can be considered in patients with extensive coronary artery disease (CAD) not amenable to PCI, after multidisciplinary team (MDT) discussion if cancer prognosis is >12 months.

In patients with thrombocytopenia (platelet count < 100 000/μL), platelet transfusion before catheterization (for platelets <20 000/μL), radial access, careful hemostasis, and the use of a lower heparin dose (30–50 U/kg) are recommended. Antiplatelets should not be withheld unless platelet count is <10 000/μL for aspirin or <30 000/μL for clopidogrel. The minimum platelet count for PCI and CABG is 30 000/μL and 50 000/μL respectively.

Figure 1 below shows the management of thrombocytopenia in cancer patients presenting with ACS. Following ACS management, the MDT should review the cancer therapy and stop medications associated with thrombosis and ACS. **Figure 2** shows cancer treatments and pathophysiology of ACS.

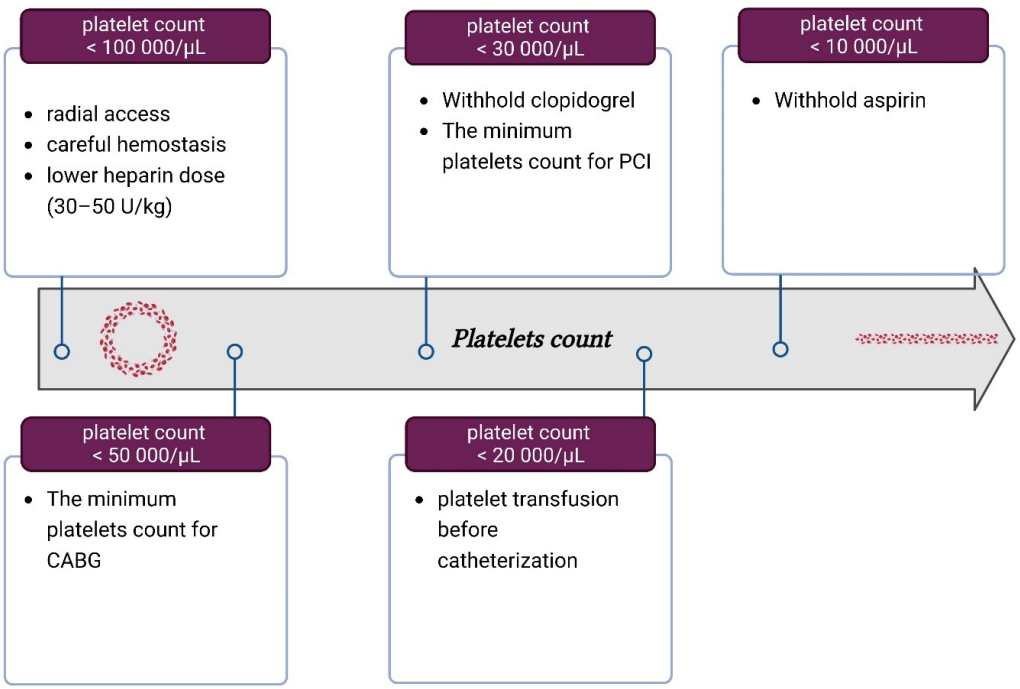


Figure 1. Management of thrombocytopenia in cancer patients presenting with ACS (7). Figure produced by M Dafaalla.
ACS = acute coronary syndrome; CABG = coronary artery bypass graft; PCI = percutaneous coronary intervention.

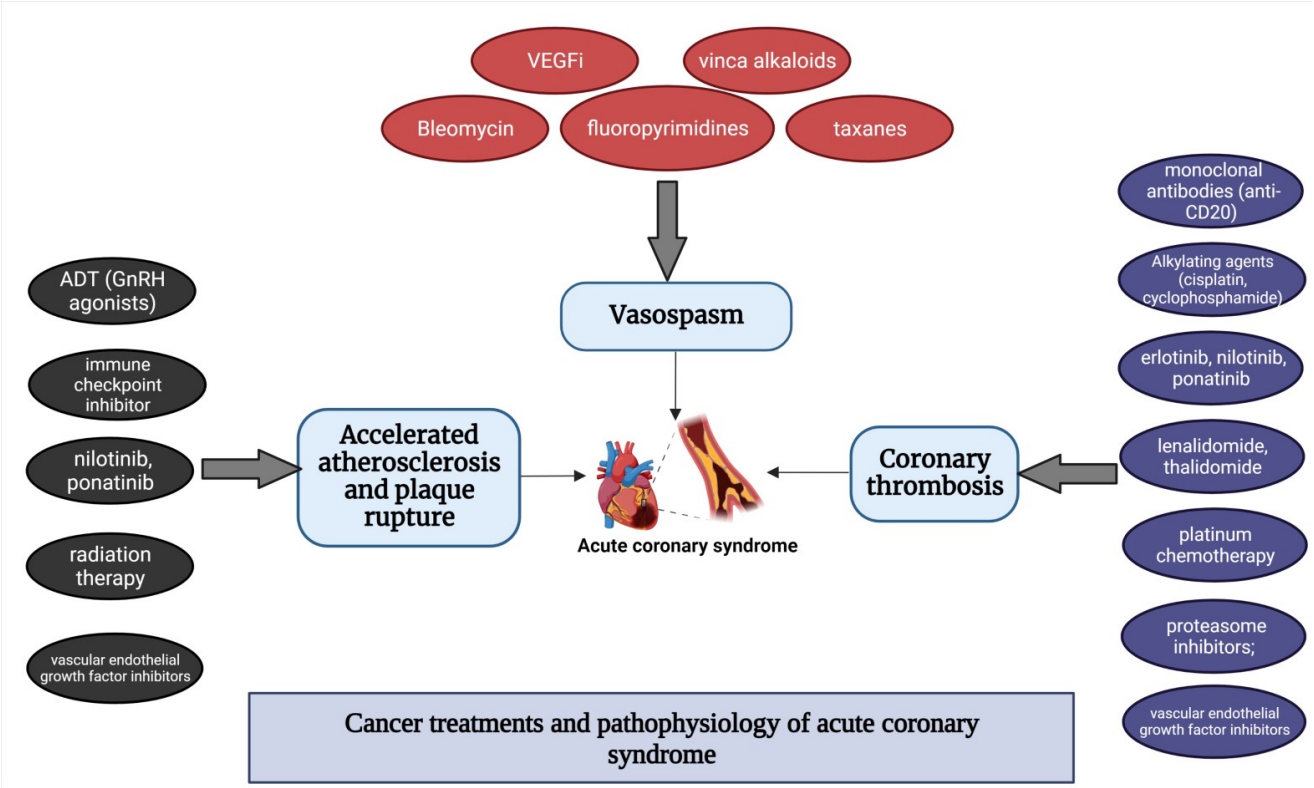


Figure 2. Cancer treatments and pathophysiology of acute coronary syndrome (7). Image produced by M Dafaalla.
ADT = androgen deprivation therapy; CD20 = cluster of differential 20; GnRH = gonadotropin-releasing hormone; VEGFi = vascular endothelial growth factor inhibitor.

Atrial fibrillation

AF is common in cancer patients and decisions regarding long term anticoagulation can be complex. The guidelines recommends adoption of an approach integrating T (thrombotic risk), B (bleeding risk), I (interactions among drugs), and P (patient access and preferences). The thrombotic risk should be stratified using the CHA2DS2-VASc score taking into account that it may underestimate the actual thromboembolic risk. The guidelines recommend that patients with CHA2DS2-VASc score 0 (men) or 1 (women) may have a higher thrombotic risk than patients without cancer and may be considered for therapeutic anticoagulation after assessing the bleeding risk. The AF clinical pattern (e.g paroxysmal, persistent) should not affect the decisions regarding long term anticoagulation. NOACs are preferred to vitamin K antagonists and LMWH (excluding patients with mechanical heart valves or moderate-to-severe mitral stenosis) in patients without a high bleeding risk, significant drug–drug interactions, or severe renal dysfunction. Clinicians may consider LMWH in patients who are not suitable for NOAC. If there are contraindications for long-term anticoagulation, left atrial appendage occlusion can be considered in patients with a life expectancy >12 months.

Conclusion

While the ESC guidelines provide an important resource for management of the bleeding and thrombotic risk in cancer patients, most of the evidence is derived from observational studies or ad-hoc analysis of clinical trials because cancer patients are not well represented in the cardiovascular trials. There is a huge demand for more robust evidence to reinforce the current recommendations to improve the clinical outcomes of cancer patients presenting with acute cardiovascular presentations.

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