

# Bleeding risk and gaps in the evidence: the story of a diabetic patient undergoing cardiac surgery after myocardial infarction

Feka A.<sup>1</sup>, Verdugo-Marchese M.<sup>2</sup>, Gunga Z.<sup>2</sup>, Kirsch M.<sup>2</sup>, Perrottet N.<sup>1</sup>, Sadeghipour F.<sup>1,3,4</sup>

<sup>1</sup> Department of Pharmacy, Lausanne University Hospital, Lausanne, Switzerland

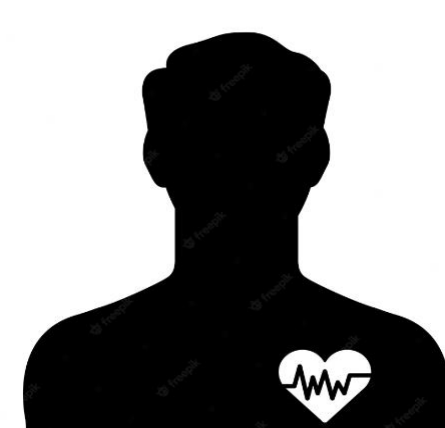
<sup>2</sup> Departement of Cardiac Surgery, Lausanne University Hospital, Lausanne, Switzerland

<sup>3</sup> Center for Research and Innovation in Clinical Pharmaceutical Sciences, University of Lausanne, University of Geneva, Switzerland

<sup>4</sup> Institute of Pharmaceutical Sciences of Western Switzerland, School of Pharmaceutical Sciences, University of Geneva, University of Lausanne, Switzerland.

59-year-old patient known for:

- **Diabetes**
- **Heart failure with reduced ejection fraction (HFrEF)**
- Hypertension



He was admitted to our hospital for **NSTEMI** (myocardial infarction without persistent ST-segment elevation).

## DAY 1 & 2



The coronary angiography showed **multivessel coronary artery disease**. Magnetic resonance imaging confirmed **myocardial viability** in all segments.

These elements led the Heart team to choose CABGs over percutaneous coronary intervention (PCI).

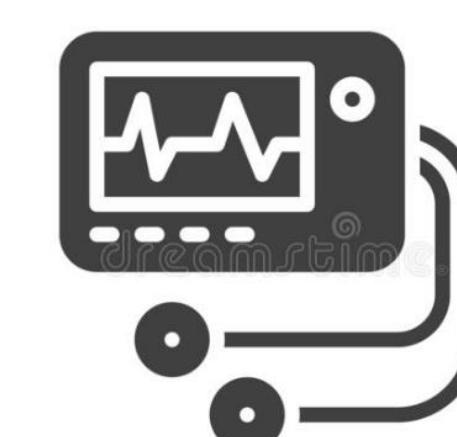
## DAY 13 - SURGERY



Triple coronary artery bypass grafts (CABGs).

## POST-OP DAY 2 & 3

Several episodes of atrial fibrillation (AF), leading to the prescription of apixaban 5 mg bid for stroke prevention.



European guidelines recommend the prescription of a double antiplatelet therapy (DAPT) after NSTEMI, regardless of the revascularization method [1]. After PCI, aspirin should be replaced by oral anticoagulation in case of AF [2]. No recommendation on this topic is available after CABGs.



## POST-OP DAY 12

Antithrombotic therapy at discharge (transfer to a cardiac rehabilitation center):

- **clopidogrel 75 mg qd 12 months post-op**
- **apixaban 5 mg bid 3 months post-op**

VS

## POST-OP DAY 20



Despite the CHA<sub>2</sub>DS<sub>2</sub>-VASc score of 3, **apixaban was stopped** and **clopidogrel was replaced by lifelong aspirin 100 mg qd**.

By extrapolation of the European guidelines for PCI [2], a P2Y<sub>12</sub> receptor inhibitor as clopidogrel was preferred over aspirin at the time of the discharge.

In absence of recurrence of postoperative AF at 3 months, apixaban would have been stopped and replaced by lifelong aspirin.

This serious bleeding event required a major change in the antithrombotic therapy and highlights a grey zone of the European guidelines.

## CONCLUSION

This case highlights the **gaps in the evidence** about the antithrombotic therapy in patients presenting AF and undergoing CABGs after NSTEMI.

The management of antithrombotic therapy **after a serious bleeding event** is not addressed in the European guidelines, urging cardiac surgeons to take decisions on a case-by-case basis.

## POST-OP DAY 19

He developed **dyspnea** and was transferred to the emergency room of our hospital.

A transthoracic echocardiography showed **pericardial effusion** and a partial collapse of the right atrium and right ventricle, leading to an **urgent pericardial drainage** (bleeding event).



## REFERENCES

1. M. Valgimigli et al, European Heart Journal (2018) 39, 213–254
2. J. Collet et al, European Heart Journal (2020) 00, 1–79