Multiple choice questions

1. A patient with stable angina on maximal tolerated therapy consents to coronary angiography with proceed to revascularisation, if indicated. He is already on aspirin. Which of the following statement is true of a loading dose ?
   a. **600mg clopidogrel should be started on admission**
   b. **It is safe to give a 600mg of clopidogrel in the cath lab once coronary anatomy has been defined and a decision made to proceed to PCI**
   c. **600mg of clopidogrel should be started one week before hospital admission**
   d. **600mg of clopidogrel should be started only after successful coronary revascularisation**
   e. **Either ticagrelor or prasugrel should be given in the cath lab once coronary anatomy has been defined and a decision made to proceed to PCI**

2. A 72 years old patient (with a past history of angiodysplasia and bleeding requiring transfusion) is admitted with a troponin positive ACS. Following coronary revascularisation, which one of the following options is supported by trial evidence to reduce bleeding risk ?
   a. **12 months of DAPT with clopidogrel**
   b. **3 months of DAPT with clopidogrel followed by aspirin monotherapy**
   c. **3 months of DAPT with ticagrelor followed by ticagrelor monotherapy, if no bleeding at 3 months**
   d. **12 months of DAPT with low dose (60mg bid) ticagrelor**
   e. **3 months of DAPT with half dose prasugrel followed by aspirin monotherapy**

3. Following an admission with non STE-MI and coronary revascularisation, the patient's primary care physician asks for advice about extending antithrombotic treatment beyond 12 months. The patient is 64 years old, has insulin treated diabetes mellitus and this was his second admission in the past 15 months. Trial evidence supports the extended use of which one of the following P2Y12 agents for high risk ACS?
   a. **Clopidogrel 75mg od**
   b. **Prasugrel 5 od**
   c. **Ticagrelor 90 bd**
   d. **Prasugrel 10mg od**
   e. **Ticagrelor 60 bd**

4. In patients on oral anticoagulants for atrial fibrillation undergoing PCI, which of the following trials used a factorial design to specifically evaluate safety (with respect to bleeding) of a single P2Y12 inhibitor with an anticoagulant versus triple therapy with aspirin?

a. **ENTRUST-AF**

b. **PIONEER**

c. **RE-DUAL**

d. **WOEST**

e. **AUGUSTUS**

5. In patients on Vitamin K antagonist for atrial fibrillation, when is it safe to proceed with PCI without bridging intravenous heparin therapy?

a. when INR ≤2 and with radial access, but parenteral heparin may be given for radial artery patency

b. when INR ≤2 and with radial access but bridging therapy with intravenous heparin must be started pre-procedure

c. when INR >2 and radial access and no bridging with heparin is needed

d. when INR ≤1.5 and bridging with intravenous heparin

e. not until VKA stopped for stopped for 48 hours regardless of INR

6. In patients already on DOAC and scheduled to undergo PCI which one of the following management plan is recommended pre and peri procedure?

a. No interruption of DOAC therapy and heparin is not required

b. Withhold DOAC for 48 hours and start parenteral heparin bridging

c. Withhold DOAC for 24 hours and parenteral heparin is not required

d. Withhold DOAC for 24 hours and give parenteral heparin (70-100iU/kg)

e. No interruption of DOAC and low dose parenteral heparin (30-50iU/kg)

Answers

1. B – there is scant evidence for the benefit of pre loading P2Y12 against in lab loading. The only prospective trial to test this hypothesis was the PRAGUE-8 trial which demonstrated no ischaemic differences but noted an increase in minor bleeding for the pre loading arm.
2. C – The only prospective trial in high bleeding risk that included patients of this age was the TWILIGHT study. In this patients at high bleeding risk were randomised to DAPT with ticagrelor for 3 months. After this time they were randomised to either aspirin or placebo in combination with ticagrelor 90 mg bid to 12 months. Ticagrelor monotherapy was shown to similar efficacy but with reduced bleeding. Whilst SENIOR demonstrated safety and efficacy of DAPT (with clopidogrel) for 6 months, this trial recruited only patients ≥ 75 years old.
3. E – The PEGASUS study in patients with a history of ACS and high risk features demonstrated superiority of long term ticagrelor and aspirin over aspirin alone in reducing ischaemic events. The 60 mg bid dose had similar efficacy as the higher dose but with less bleeding events.
4. E – Although all the trials listed confirmed redundancy of aspirin in patients treated with a DOAC and P2Y12, only the AUGUSTUS trial was prospectively designed to test reduced bleeding events with DAT versus TAT.
5. A – When undertaking a radial access procedure, it is recommended that the INR is ≤2. There is no need for bridging therapy beforehand, nor is there evidence for the role of heparin in this setting. However, recent evidence about the beneficial role low dose heparin in maintaining radial artery patency has led to a recommendation to consider low dose parenteral heparin at the end of the procedure.
6. D – The guidelines recommend withholding DOAC for 24 hours before planned revascularisation. There is no benefit for bridging with heparin during this time as there is no proven benefit. However, and importantly, the procedure should be covered with the standard heparin dose (70-100 iU/kg). If the procedure is emergent then one may proceed to PCI but heparin is still required peri procedure.