Guidance for prescribing Ticagrelor to treat Acute Coronary Syndromes (ACS)

Background
Ticagrelor has been approved for the treatment of ACS by the NICE TA 236 (October 2011). The Yorkshire Cardiovascular Network has developed pathways to implement the NICE guidance in patients diagnosed with STEMI or NSTEMI (see overleaf).

Selection of Patients
Ticagrelor should be considered for patients with:
- A new STEMI treated with primary PCI or thrombolytic therapy
- A confirmed diagnosis of NSTEMI irrespective of any revascularisation strategy.

Dose
- STEMI: loading dose of ticagrelor 180mg STAT followed by
  Ticagrelor 90mg TWICE DAILY for up to 3 years, plus aspirin 75mg once a day lifelong
- ACS (except STEMI): load with clopidogrel 300mg STAT followed by 75mg , plus aspirin 75mg once daily. When diagnosis of NSTEMI has been confirmed with a positive troponin result, load with ticagrelor 180mg STAT followed by
  Ticagrelor 90mg TWICE DAILY for up to 3 years, plus aspirin 75mg once daily lifelong.

Ticagrelor treatment should be stopped when clinically indicated or at a maximum of 3 years.

Contra-indications
Ticagrelor is contra-indicated in the following situations:
- Active pathological bleeding
- History of intracranial haemorrhage
- Moderate to severe hepatic impairment
- Co-administration of ticagrelor with strong CYP3A4 inhibitors (e.g., ketoconazole, clarithromycin, nefazodone, ritonavir, and atazanavir)
- Hypersensitivity to the active substance or to any of the excipients

Cautions
Ticagrelor should be used with caution in the following patient groups:-
- Increased bleeding risk,
  for example clinically important thrombocytopenia or anaemia, gastrointestinal bleed within the past 6 months or major surgery within the past 30 days. These groups were excluded from PLATO and so ticagrelor should be used with consideration of the balance of the risks and the expected benefit to the patient.
  Patients on concomitant medication that may increase the risk of bleeding (e.g. non-steroidal anti-inflammatory drugs (NSAIDs), oral anticoagulants, fibrinolytics, SSRI antidepressants) Discontinue NSAIDs whenever possible. Consider prophylaxis with lansoprazole 15 – 30mg od when co-administration of the above agents is necessary
- Patients at risk of bradycardia
- Asthma/COPD: If a patient, particularly those with pre-existing asthma/COPD reports new, prolonged or worsened dyspnoea this should be investigated fully and if not tolerated, treatment with ticagrelor should be stopped and replaced with clopidogrel.
- Renal impairment: Creatinine levels may increase during treatment with ticagrelor. Renal function should be checked at baseline, after one month and then as clinically indicated, paying special attention to patients ≥75 years, patients with moderate/severe renal impairment and those receiving concomitant treatment with an ACEI or ARB
- Ticagrelor may increase the risk of hyperuricaemia
Commonly Used Interacting Drugs (See SPC for a full list of drug interactions)

- Clarithromycin - contraindicated. Consider using erythromycin as an alternative.
- Ketoconazole - contraindicated. Consider using fluconazole as an alternative
- Nefazodone - contraindicated
- Ritonavir and atazinavir - contraindicated
- Dexamethasone, phenytoin, carbamazepine, rifampicin and phenobarbital can reduce the efficacy of ticagrelor. Consider clopidogrel or prasugrel as an alternative (N.B. carbamazepine also may reduce clopidogrel levels)
- Verapamil, quinidine, and cyclosporin may increase ticagrelor exposure. Consider clopidogrel as an alternative. Ticagrelor may increase digoxin and ciclosporin levels – monitoring is advised

Details of contraindications, cautions, drug interactions and adverse effects listed above are not exhaustive. For further information always check with BNF [www.bnf.org.uk](http://www.bnf.org.uk) or SPC ([www.medicines.org.uk](http://www.medicines.org.uk)).

### APPROVAL PROCESS

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Use of Ticagrelor in patients with possible ACS (Not STEMI)

Patient admitted with possible ACS (Not STEMI)

All patients receive Clopidogrel including a loading dose (300mg loading, 75mg daily maintenance) whilst awaiting Troponin and cardiologist review

Confirmed diagnosis following troponin results and Cardiology review

Confirmed diagnosis of NSTEMI

Switch to Ticagrelor (Load with 180 mg then 90mg bd maintenance dose)

Discharge with a maintenance dose of Ticagrelor 90mg bd for 12 months

Confirmed diagnosis of Unstable Angina

Continue with Clopidogrel 75mg daily

Discharge with a maintenance dose of Clopidogrel for 12 months

Use of Ticagrelor in patients with possible Acute Coronary Syndrome (ACS)

Patient admitted with possible ACS (Not STEMI)

All patients receive Clopidogrel including a loading dose (300mg loading, 75mg daily maintenance) whilst awaiting Troponin and cardiologist review

Confirmed diagnosis following troponin results and Cardiology review

Confirmed diagnosis of NSTEMI

Switch to Ticagrelor (Load with 180 mg then 90mg bd maintenance dose)

Discharge with a maintenance dose of Ticagrelor 90mg bd for 12 months

Confirmed diagnosis of Unstable Angina

Continue with Clopidogrel 75mg daily

Discharge with a maintenance dose of Clopidogrel for 12 months

Use of Ticagrelor in patients with ST Elevation MI (STEMI)

Patient admitted with STEMI

Primary PCI as revascularisation strategy

Load with Ticagrelor 180mg and maintain with 90mg bd. Stop Clopidogrel if already on it.

Discharge with a maintenance dose of Ticagrelor 90mg bd for 12 months

Thrombolytic therapy as revascularisation strategy

Load with Ticagrelor 180mg and maintain with 90mg bd. Stop Clopidogrel if already on it.

Discharge with a maintenance dose of Ticagrelor 90mg bd for 12 months

NB

Ticagrelor should be given to this patient group regardless of any revascularisation strategy. The usual strategy of ceasing anti-platelet therapy 7 days prior to CABG still applies. Ticagrelor should be given for 12 months post CABG.

For patients who are intolerant of Ticagrelor, Clopidogrel should be considered.

This flowchart should be used alongside the product prescribing information.

Written by Dr. A. Mather 9/2014. Review date 9/2016