LMMG New Medicine Recommendation

Ticagrelor (Brilique®) for acute coronary syndromes

LMMG Recommendation: Amber0
Ticagrelor in combination with low-dose aspirin is recommended as the preferred antiplatelet in patients with NSTEMI or unstable angina (with ST- or T-wave changes and one or more NICE-defined risk factors) who are to be managed medically.

Ticagrelor in combination with low-dose aspirin is recommended as a treatment option in patients with STEMI requiring primary PCI, and patients with NSTEMI or unstable angina (with ST- or T-wave changes and one or more NICE-defined risk factors) undergoing PCI.

Treatment with ticagrelor should be for a maximum of 12 months in line with NICE TA 236.

Summary of supporting evidence:

- Ticagrelor significantly reduced the incidence of the composite endpoint of vascular death, MI and stroke compared with clopidogrel across ACS patients in the PLATO trial (NNT 53 at 12 months). The difference was driven by vascular death (NNT 91) and MI (NNT 91), as there was no statistically significant difference observed in stroke rates.
- Significant reductions in the primary endpoint were observed in patients diagnosed with STEMI (NNT 63) and NSTEMI (NNT 40). There was no significant difference between ticagrelor and clopidogrel in patients diagnosed with unstable angina; however, these patients were a smaller subgroup.
- In patients who were planned for invasive management before randomisation (72%), the reduction in the composite primary endpoint was similar to that observed in the overall trial population (NNT 59). In the smaller subgroup of patients planned for medical management (28%) the reduction was of borderline statistical significance. However, in those who subsequently underwent medical management (38%), ticagrelor significantly reduced the rate of the composite endpoint compared with clopidogrel (NNT 35) and that reduction was greater than observed in those who actually underwent invasive management (NNT 84).
- There was no statistically significant difference between ticagrelor and clopidogrel in major bleeding events; however, the incidence of combined major and minor bleeds (NNH 67), and of non-CABG-related bleeds (NNH 143) was significantly greater with ticagrelor treatment. There were more fatal intracranial bleeds with ticagrelor, but more fatal non-intracranial bleeds with clopidogrel.
- The PLATO trial had some important limitations: many patients did not complete 12 months of treatment in either arm (median duration 9 months); almost half of patients enrolled were already receiving clopidogrel at baseline; only 17% of patients randomised to clopidogrel received the current UK standard loading does of 600mg.
- There are no direct comparative data for ticagrelor and prasugrel. Published indirect comparisons suggest similar superiority of ticagrelor and prasugrel over clopidogrel, but NICE concluded that insufficient clinical evidence was available for a credible indirect comparison of ticagrelor and prasugrel. Prasugrel is currently recommended by NICE as a treatment option in patients with STEMI undergoing primary PCI and other acute coronary

syndrome patients with diabetes undergoing PCI.

- NICE concluded that ticagrelor was a cost effective treatment option compared to clopidogrel in patients with ACS, irrespective of whether they have STEMI, NSTEMI or unstable angina (as defined in the PLATO trial). No estimates of cost effectiveness or recommendations for use specific to subgroups of patients undergoing PCI or medical management are considered in the NICE technology appraisal of ticagrelor.
- Ticagrelor is already commissioned in patients undergoing primary PCI and those with high risk NSTEMI requiring PCI. Based on figures provided by the Lancashire and Cumbria Cardiac Network and the NICE costing report for ticagrelor, expansion of use into eligible non-PCI treated patients would incur additional acquisition costs of £1million to £2 million per year across Lancashire, of which 92% would fall in primary care budgets.

Author:	**Warren Linley**
Version:	**Recommendation**
Clinical Reference Group (if appropriate)	
Reviewer	**Brent Horrell**
Date of formal consultation:	**30 July 2013**
Date of recommendation to member organisations by LMMG:	**10 October 2013**

Details of Review

Name of medicine (generic & brand name)**:** Ticagrelor (Brilique®)
Strength(s) and Form(s): 90mg f/c tablets
Licensed indication(s): Ticagrelor, co-administered with acetylsalicylic acid [aspirin] is indicated for the prevention of atherothrombotic events in adult patients with Acute Coronary Syndromes (unstable angina, non ST elevation Myocardial Infarction [NSTEMI] or ST elevation Myocardial Infarction [STEMI]); including patients managed medically, and those who are managed with percutaneous coronary intervention (PCI) or coronary artery by-pass grafting (CABG).
Reason for Review: Request from Lancashire and Cumbria Cardiac Network.
Proposed use (if different from or in addition to licensed indication above): **The current position** statement for Lancashire is to prescribe ticargelor only for the following cohort of patients: • Primary PCI patients in Lancashire and South Cumbria (the main indication) • Patients developing stent thrombosis on Aspirin and Clopidogrel • Patients undergoing PCI who have had non-bleeding side effects on clopidogrel (such as rash, pruritis, bronchospasm, diarrhoea, etc.) • Patients identified as high risk (ref GRACE NICE CG94), undergoing PCI for Non-ST elevation myocardial infarction (NSTEMI) **The proposal requests** extended use of ticagrelor to include NSTEMI, irrespective of whether treated with a stent or not, and patients with unstable angina with ST- or T-wave changes and one of: age ≥ 60, previous MI or CABG, 2 vessel coronary disease, previous ischaemic stroke or TIA, carotid artery disease, diabetes mellitus, peripheral vascular disease or chronic renal dysfunction.

Background and context

In October 2011 NICE published a technology appraisal of ticagrelor (TAG236 [1]) recommending its use for up to 12 months as a treatment option in adults with acute coronary syndromes, i.e. in people with:

- STEMI that cardiologists intend to treat with primary percutaneous coronary intervention (PCI), or
- NSTEMI, or

- unstable angina - defined as ST or T wave changes on electrocardiogram suggestive of ischaemia plus one of the characteristics: age 60 years or older; previous myocardial infarction or previous coronary artery bypass grafting (CABG); coronary artery disease with stenosis of 50% or more in at least two vessels; previous ischaemic stroke; previous transient ischaemic attack, carotid stenosis of at least 50%, or cerebral revascularisation; diabetes mellitus; peripheral arterial disease; or chronic renal dysfunction, defined as a creatinine clearance of less than 60 ml per minute per 1.73m^2 of body-surface area.

In December 2011, the Lancashire and Cumbria Cardiac Network (LCCN) requested use of ticagrelor primarily for PCI-managed patients, and in March 2012 Lancashire and Cumbria PCTs released position statements that agreed ticagrelor for priority use in the following groups [2]:

- Primary PCI patients in Lancashire and South Cumbria (the main indication)
- Patients developing stent thrombosis on Aspirin and Clopidogrel
- Patients undergoing PCI who have had non-bleeding side effects on clopidogrel (such as rash, pruritis, bronchospasm, diarrhoea, etc.)
- Patients identified as high risk (ref GRACE NICE CG94), undergoing PCI for Non-ST elevation myocardial infarction (NSTEMI).

LCCN has considered comparative uptake data for ticagrelor and suggests that the indications for use of ticagrelor are more limited in Lancashire and Cumbria than in neighbouring networks in the North of England. It has proposed that the indications for use be extended to include the following:

- Patients with NSTEMI whether treated by a stent or not
- Patients with unstable angina with ST or T wave changes and one of the characteristics described by NICE above

It has also proposed that the current GP notification forms for ticagrelor be withdrawn at this time and that a prescribing information sheet be produced to support colleagues in primary care.

Other guidance relevant to the proposal

Date	NICE TA / CG	Drug	NICE Recommendation
2009	TA 182: Prasugrel for the treatment of acute coronary syndromes with percutaneous coronary intervention [10]	Prasugrel	Recommended in combination with aspirin as an option for preventing atherothrombotic events in people with acute coronary syndromes having PCI, only when: • immediate primary percutaneous coronary intervention for ST-segment-elevation myocardial infarction is necessary or • stent thrombosis has occurred during clopidogrel treatment or • the patient has diabetes mellitus [10].
2010	CG 94 (incorporates TA80): The early management of unstable angina and non-ST-segment-elevation myocardial infarction [11]	Clopidogrel	This recommends: • As soon as the risk of adverse cardiovascular events has been assessed, offer a loading dose of 300 mg clopidogrel in addition to aspirin to patients with a predicted 6-month mortality of more than 1.5% and no contraindications (for example, an excessive bleeding risk). • Offer a 300-mg loading dose of clopidogrel to all patients with no contraindications who may undergo PCI within 24 hours of admission to hospital.* • Treatment with clopidogrel in combination with low-dose aspirin should be continued for 12 months after the most recent acute episode of non-ST-segment-elevation ACS. Thereafter, standard care, including treatment with low-dose aspirin alone, is recommended. (This recommendation has been incorporated from TA 80.) • Consider discontinuing clopidogrel treatment 5 days before CABG in patients who have a low risk of adverse cardiovascular events [11].
2013	CG 167: The acute management of myocardial infarction with ST-segment elevation [12]	Ticagrelor	Ticagrelor in combination with low-dose aspirin is recommended for up to 12 months as a treatment option in people with STEMI – defined as ST elevation or new left bundle branch block on electrocardiogram – that cardiologists intend to treat with primary PCI. Guidance on prasugrel for the treatment of acute coronary syndromes has not been incorporated in this guideline because this technology appraisal is currently scheduled for update [12].
* The NICE technology appraisal of ticagrelor notes that current practice in the UK involves a loading dose for clopidogrel of 600mg (unlicensed dose) [1].			

Evidence in Proposed Use

Summary of Efficacy Data in Proposed Use:

Evidence for ticagrelor in acute coronary syndrome is available from the pivotal PLATO trial [3].

Trial design: Multinational, phase 3, double-blind RCT conducted in 18,624 patients hospitalised because of acute coronary syndrome. Patients were indicated for planned invasive or medical management before randomisation. Treatment with study medication was planned for 12 months but patients were allowed to leave the study at 6 or 9 months if sufficient primary endpoints had been reached by that time. Median treatment duration was for 9.1 months.

Patients: Eligible if onset of symptoms had been within the previous 24 hours. Those who received fibrinolytic therapy within the last 24 hours were excluded. Median age was 62 years, 28% were female, 92% were white, 36% were smokers, 66% had hypertension, 47% dyslipidaemia, and 25% had diabetes mellitus. 38% were diagnosed with STEMI, 43% NSTEMI, and 17% unstable angina.

Intervention and Comparators: All patients received aspirin unless intolerant plus either ticagrelor given as a 180mg loading dose followed by 90mg twice a day, or clopidogrel given as a 300mg loading dose followed by 75mg daily thereafter, unless already taking clopidogrel. Around 46% of all patients received clopidogrel in hospital before randomisation [1], and less than 20% of all clopidogrel recipients received the UK-standard loading does of 600mg. In those undergoing CABG, ticagrelor was to be withheld for 24-72 hours beforehand, and clopidogrel for 5 days beforehand.

Outcomes and Results: Results are summarised in **Table 1** and **Table 2**. The composite primary endpoint of cardiovascular (CV) death, MI and stroke at 12 months in all patients was significantly reduced in ticagrelor recipients compared with clopidogrel (9.8% vs. 11.7%; hazard ratio 0.84 [95% CI 0.77 to 0.92]; NNT 53). This result was driven by a significantly lower rate of CV deaths (NNT 91) and MI (NNT 91), as there was no significant difference in rates of stroke between ticagrelor and clopidogrel. Beneficial effects of ticagrelor on all cause deaths and stent thrombosis were observed but should be considered exploratory findings, as the formal statistical analysis plan would preclude their assessment based on the non-significant findings for stroke.

In the pre-specified subgroup of patients who at randomisation were planned for invasive management (72%), the reduction in the same composite endpoint was similar to the overall trial population (NNT 59). In those planned for medical management (28%) the reduction in CV deaths, MI or stroke was of borderline statistical significance. However, in those who subsequently underwent medical management (38%), ticagrelor significantly reduced the rate of the composite endpoint compared with clopidogrel (NNT 35) and that reduction was greater than observed in those who actually underwent invasive management (NNT 84) [4,5].

Statistically significant reductions in the composite endpoint were observed for patients diagnosed with STEMI (NNT 63) and NSTEMI (NNT 40), but not in the smaller subgroup diagnosed with unstable angina.

Table 1. Primary endpoint events (combined cardiovascular death, or non-fatal MI, or non-fatal stroke) in key (sub)groups in the PLATO trial

Patient groups in PLATO trial	Primary endpoint rates (ticagrelor vs. clopidogrel)	Hazard ratio (95% CI) (ticagrelor vs. clopidogrel)	NNT (at 12 months)
All	9.8% vs. 11.7%	0.84 (0.77 to 0.92)	53
STEMI diagnosis	8.5% vs. 10.1%	0.84 (0.72 to 0.98)	63
NSTEMI diagnosis	11.4% vs. 13.9%	0.83 (0.73 to 0.94)	40
UA diagnosis	8.6% vs. 9.1%; NS	0.96 (0.75 to 1.22); NS	
Invasive treatment Planned	8.9% to 10.6%	0.84 (0.75 to 0.94)	59
Medical Management Planned	12.0% vs. 14.3%	0.85 (0.73 to 1.00)	44
Invasive treatment Received	9.5% vs. 10.7%	0.88 (0.78 to 0.99)	84
Medical Management Received	10.4% vs. 13.3%	0.79 (0.69 to 0.91)	35

NNT=Number of patients needed to be treated with ticagrelor instead of clopidogrel for one patient to achieve benefit

Table 2. Secondary endpoint events in all patients in the PLATO trial

Secondary / exploratory endpoints	Endpoint rates (ticagrelor vs. clopidogrel)	Hazard ratio (95% CI) (ticagrelor vs. clopidogrel)	NNT (at 12 months)
All cause death or MI or stroke	10.2% vs. 12.3%	0.84 (0.77 to 0.92)	48
CV death or MI or stroke or cardiac ischaemia or TIA or other arterial thrombotic event	14.6% vs. 16.7%	0.88 (0.81 to 0.95)	48
MI	5.8% vs. 6.9%	0.84 (0.75 to 0.95)	91
CV death	4.0% vs. 5.1%	0.79 (0.69 to 0.91)	91
Stroke	1.5% to 1.3%; NS	1.17 (0.91 to 1.52); NS	
All cause death†	4.5% vs. 5.9%	0.78 (0.69 to 0.89)	72†
Stent thrombosis (probable/definite)†	2.2% vs. 2.9%	0.75 (0.59 to 0.95)	143†

†Exploratory finding only (as multiple unadjusted testing and hierarchical testing of secondary endpoints found no significant difference for stroke events).
NNT=Number of patients needed to be treated with ticagrelor instead of clopidogrel for one patient to achieve benefit

Summary of Safety Data:
The main safety considerations for antiplatelets relate to bleeding complications. There was no statistically significant difference observed for overall major bleeds between ticagrelor or clopidogrel using either the PLATO trial definition (11.6% vs. 11.2%, p=0.43) or the TIMI definition (7.9% vs. 7.7%, p=0.57) [3]. There were no significant differences in overall life-threatening or fatal bleeds (5.8% vs. 5.8%), or fatal bleeds (0.3% vs. 0.3%), but fatal intracranial bleeds were significantly more frequent with ticagrelor (0.1% vs. 0.01%, p=0.02; Number of patients needed to be treated with ticagrelor instead of clopidogrel for one more patient to experience adverse event [NNH] 1,111). Overall intracranial bleeding rates were numerically but not significantly higher with ticagrelor compared with clopidogrel (0.3% for ticagrelor and 0.2% for clopidogrel, p=0.06), and non-fatal intracranial bleeding rates were similar (0.2% vs. 0.2%, respectively). Fatal non-

intracranial bleeds were significantly more frequent with clopidogrel (0.1% vs. 0.3%, p=0.03; NNH 500).

Non-CABG-related major bleeds were significantly more frequent with ticagrelor than clopidogrel using both the PLATO trial definition (4.5% vs. 3.8%, p=0.03; NNH 143) or the TIMI definition (2.8% vs. 2.2%, p=0.03; NNH 167). CABG-related major bleeds were numerically lower with ticagrelor but not statistically significantly so. Combined major or minor bleeding was statistically significantly greater with ticagrelor than clopidogrel using the PLATO-trial definition (16.1% vs. 14.6%, p=0.008; NNH 67), but not using the TIMI definition (11.4% vs. 10.9%, p=0.33). Similar rates of bleeding events were observed in patients planned for invasive treatment before randomisation as in the overall trial population, although statistical significance in favour of clopidogrel was not achieved for non-CABG-related major bleeds in this smaller pre-specified subgroup [6].

Discontinuations of treatment due to adverse events were significantly greater for ticagrelor as compared with clopidogrel (7.4% vs. 6.0%, p<0.001; NNH 71). Dyspnoea was more common with ticagrelor than clopidogrel (13.8% vs. 7.8%, p<0.001; NNH 17), and resulted in a greater, albeit low, rates of discontinuation for ticagrelor (0.9% vs. 0.1%, p<0.001; NNH 125). Significantly greater increases from baseline in serum creatinine and uric acid levels were observed with ticagrelor than with clopidogrel during treatment, which were no longer significantly different 1 month after end of treatment [3].

Other Efficacy and Safety Data:
There are no direct comparative data for ticagrelor and prasugrel. Limited indirect comparative evidence is available from a systematic review and network meta-analysis of RCTs of ticagrelor, prasugrel and standard or high-dose clopidogrel in patients scheduled for PCI [7]. Fourteen RCTs of variable size and duration of follow-up were included in the review. There were no statistically significant differences observed in indirect comparisons of ticagrelor and prasugrel for CV mortality, MI, stroke, major adverse cardiovascular events (MACE), or all-cause mortality. Prasugrel significantly reduced the incidence of stent thrombosis (odds ratio 0.63 [95%CI 0.43 to 0.93]) but also significantly increased the incidence of major bleeding (odds ratio 1.45 [95% CI 1.10 to 1.90]) and combined major or minor bleeding (odds ratio 1.37 [95% CI 1.11 to 1.68]). There was no significant difference in non-CABG-related major bleeding. A critique by the Centre for Reviews and Dissemination, University of York concluded that the collective evidence contained within this review was at low risk of bias, reflected the evidence base and that authors' conclusions were likely to be reliable [8].

The NICE technology appraisal of ticagrelor considered an indirect comparison of the PLATO trial of ticagrelor and the TRITON-TIMI 38 trial of prasugrel in ACS, for which the same results were reported [1]. However, in this it was concluded that sufficient clinical evidence is not yet available for a credible indirect comparison of ticagrelor and prasugrel in patients with ACS, due to differences in the use of PCI and medical management, in the size and timing of the loading dose of clopidogrel, and in assessment of MI. The appraisal committee concluded that the effectiveness and safety of ticagrelor compared with prasugrel remains unknown and, therefore, no separate recommendation was made for ticagrelor compared with prasugrel in the NICE technology appraisal [1].

Summary of Evidence on Cost Effectiveness and Patient Outcomes:

Based on a critique and correction of the manufacturer's economic model, the NICE technology appraisal of ticagrelor concluded that the most plausible estimates of the lifetime incremental cost effectiveness ratios (ICERs) for 12 months of treatment with ticagrelor compared with clopidogrel would be [1]:

- All ACS patients: £7,897 per QALY gained
- STEMI patients: £8,872 per QALY gained
- NSTEMI patients: £7,215 per QALY gained
- Unstable angina: £9,131 per QALY gained.

As all ICERs were within the usual range considered to be a cost-effective use of NHS resources [£20,000 to £30,000 per QALY gained], ticagrelor was recommended as a treatment option in all these groups. Although there were no statistically significant differences observed in the PLATO trial in favour of ticagrelor in the subgroup of ACS patients with unstable angina, the appraisal committee noted that the subgroups may have been too small to detect differences, and that statistical tests for interaction by subgroup were not statistically significant. Therefore, to exclude unstable angina patients (as defined for inclusion in the PLATO trial) from the recommendation would have been speculative, would counter statistical evidence and risk excluding patients who could benefit from treatment with ticagrelor [1]. No estimates of cost effectiveness or recommendations for use specific to subgroups of patients undergoing PCI or medical management were presented.

Key Points to Note from the Available Evidence:

- Ticagrelor significantly reduced the incidence of the composite endpoint of vascular death, MI and stroke compared with clopidogrel across ACS patients in the PLATO trial (NNT 53 at 12 months). The difference was driven by vascular death (NNT 91) and MI (NNT 91), as there was no statistically significant difference observed in stroke rates.
- Significant reductions in the primary endpoint were observed in patients diagnosed with STEMI (NNT 63) and NSTEMI (NNT 40). There was no significant difference between ticagrelor and clopidogrel in patients diagnosed with unstable angina; however, these patients were a smaller subgroup.
- In patients who were planned for invasive management before randomisation (72%), the reduction in the composite primary endpoint was similar to that observed in the overall trial population (NNT 59). In the smaller subgroup of patients planned for medical management (28%) the reduction was of borderline statistical significance. However, in those who subsequently underwent medical management (38%), ticagrelor significantly reduced the rate of the composite endpoint compared with clopidogrel (NNT 35) and that reduction was greater than observed in those who actually underwent invasive management (NNT 84).
- There was no statistically significant difference between ticagrelor and clopidogrel in major bleeding events; however, the incidence of combined major and minor bleeds (NNH 67), and of non-CABG-related bleeds (NNH 143) was significantly greater with ticagrelor treatment. There were more fatal intracranial bleeds with ticagrelor, but more fatal non-intracranial bleeds with clopidogrel.
- The PLATO trial had some important limitations: many patients did not complete 12 months of treatment in either arm (median duration 9 months); almost half of patients enrolled were already receiving clopidogrel at baseline; only 17% of patients randomised to clopidogrel received the current UK standard loading does of 600mg.
- There are no direct comparative data for ticagrelor and prasugrel. Published indirect comparisons suggest similar superiority of ticagrelor and prasugrel over clopidogrel, but

NICE concluded that insufficient clinical evidence was available for a credible indirect comparison of ticagrelor and prasugrel.

- NICE concluded that ticagrelor was a cost effective treatment option compared with clopidogrel in patients with ACS, irrespective of whether they have STEMI, NSTEMI or unstable angina (as defined in the PLATO trial). No estimates of cost effectiveness or recommendations for use specific to subgroups of patients undergoing PCI or medical management are considered in the NICE technology appraisal of ticagrelor.

Innovation, Need and Equity Considerations:

There were no specific innovation claims for ticagrelor in NICE technology appraisal 236 [1]. There are no anticipated equity considerations.

Recommended Place in Therapy

Ticagrelor in combination with low-dose aspirin is recommended as the preferred antiplatelet in patients with NSTEMI or unstable angina (with ST- or T-wave changes and one or more NICE-defined risk factors) who are to be managed medically.

Ticagrelor in combination with low-dose aspirin is recommended as a treatment option in patients with STEMI requiring primary PCI, and patients with NSTEMI or Unstable angina (with ST- or T-wave changes and one or more NICE-defined risk factors) undergoing PCI.

Treatment with ticagrelor should be for a maximum of 12 months in line with NICE TA 236.

Financial and Service Implications

Comparative unit costs:

Table 3 includes example annual acquisition costs of antiplatelet agents that are licensed for use in ACS.

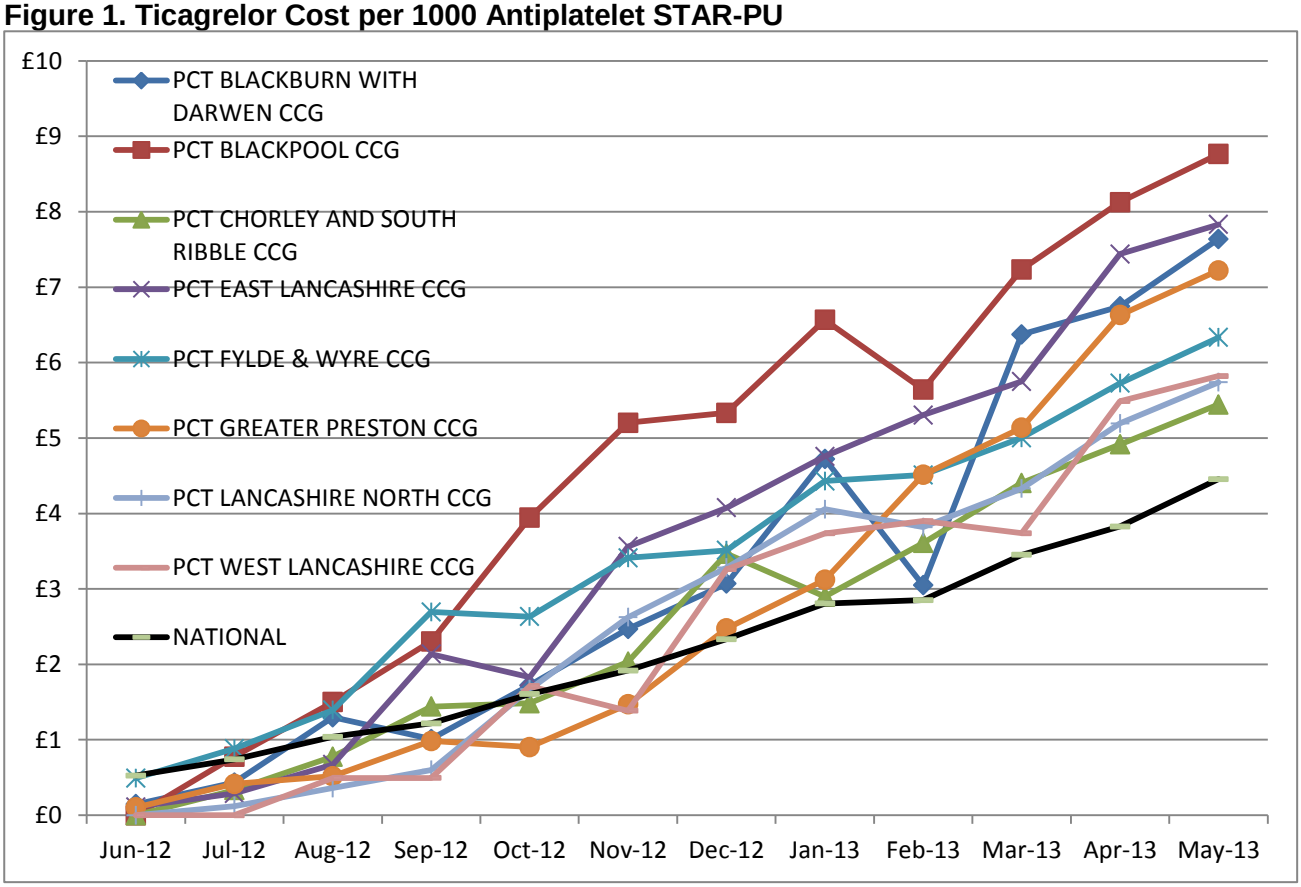
Table 3. Example annual acquisition costs of oral antiplatelets used in ACS

Drug name	Regimen	Pack cost	Annual maintenance cost per patient (ex VAT)
Ticagrelor	**180mg loading dose then 90mg twice daily**	**£54.60 for 56 x 90mg**	**£717.70**
Prasugrel	60mg loading dose then 10mg once daily	£47.56 for 28 x 10mg	£628.47
Clopidogrel	600mg* loading dose then 75mg once daily	£1.88 for 30 x 75mg	£23.31
Costs based on MIMS list prices as of 24/06/2013. Excludes costs of aspirin 75mg daily indefinitely. *Unlicensed dose – usual loading dose in UK reported to be 600mg. See individual Summaries of Product Characteristics. This table does not imply therapeutic equivalence of drugs or doses.			

Anticipated patient numbers and net budget impact:

ePACT data indicate that current prescribing of ticagrelor in Lancashire is marginally above the national average in England on a per STAR-PU basis (see Figure 1); however, it should be noted that the prevalence of coronary heart disease is higher in the North West compared to the national average [9].

Figure 1. Ticagrelor Cost per 1000 Antiplatelet STAR-PU



The proposal of LCCN would primarily expand use of ticagrelor in non-PCI treated NSTEMI and non-PCI treated unstable angina patients.

The costing report for the ticagrelor NICE technology appraisal [1] assumes that, per 100,000 population per year, there would be 33 patients with STEMI treated with primary PCI, 147 patients with NSTEMI (31 treated with PCI, 115 treated as non-PCI), and 99 patients with unstable angina (21 treated with PCI and 78 treated as non-PCI). Of the STEMI patients, 70% (23) are estimated to receive dual antiplatelet therapy, and of the NSTEMI/unstable angina patients, 90% (132 NSTEMI; 89 unstable angina) are estimated to receive dual antiplatelet therapy.

For Lancashire, with a population of around 1.5million people, this would equate to a total of 3,664 patients eligible for dual antiplatelet therapy each year. LCCN estimate 525 patients currently on ticagrelor in Lancashire (Prescribing data as of May 2013 suggests that there are approximately 500 patients per year currently using ticagrelor). Assuming current prescribing levels are increased to the NICE total patient numbers (an additional 3,139 patients) the total additional cost of the use of ticagrelor instead of clopidogrel would be £2.16million. Assuming that the loading dose and first 28 days' supply are provided by secondary care providers, the additional annual cost to primary care prescribing budgets across Lancashire would be £1.99million.

Figures provided by LCCN present lower estimates of use of ticagrelor than the NICE costing template. Ticagrelor is estimated to be used currently in 525 primary PCI patients per year across Lancashire, and additional uptake is estimated at 1,260 NSTEMI and 360 unstable angina patients. The basis of these figures is not reported. Based on these figures, the additional annual acquisition cost of ticagrelor compared against clopidogrel is estimated to be £1.115million. Assuming loading dose and the first 28 days of treatment are provided by secondary care providers, additional annual cost to primary care would be £1.03million.

Table 4 provides CCG-level estimates of possible budget impact of wider use of ticagrelor instead of clopidogrel in non-PCI treated NSTEMI or unstable angina (assuming all current PCI treated patients already receive ticagrelor).

Table 4. Possible budget impact of wider use of ticagrelor instead of clopidogrel in non-PCI treated NSTEMI or unstable angina

CCG	Total Patients	Proportion of Lancashire	Increased Expenditure based on population (assumes £1.03 million across Lancashire (Cardiac Network Figures)	Increased Expenditure based on population (assumes £1.99 million across Lancashire (NICE Costing Template All eligible patients less current PCI numbers)
PCT BLACKBURN WITH DARWEN CCG	169,651	11%	£114,286	£220,806
PCT BLACKPOOL CCG	172,857	11%	£116,446	£224,978
PCT CHORLEY AND SOUTH RIBBLE CCG	178,863	12%	£120,492	£232,795
PCT EAST LANCASHIRE CCG	371,277	24%	£250,113	£483,228
PCT FYLDE & WYRE CCG	150,932	10%	£101,676	£196,442
PCT GREATER PRESTON CCG	211,125	14%	£142,226	£274,785
PCT LANCASHIRE NORTH CCG	162,546	11%	£109,500	£211,558
PCT WEST LANCASHIRE CCG	111,720	7%	£75,261	£145,407
	1,528,971	**100%**	**£1,030,000**	**£1,990,000**

Impact on service delivery to patients:

Beyond the budget impact of the proposed expanded use of ticagrelor, no impact on service delivery is anticipated.

References

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