The Use of Clopidogrel in Carotid Endarterectomy: An Audit of Current Practice

A.J. Jackson,* R.P. Teenan and D.J. Orr

Department of Vascular Surgery, Glasgow Royal Infirmary, UK

Clopidogrel is commonly encountered in patients presenting for carotid endarterectomy (CEA). Its use around this time is controversial and there is no randomized control trial data to determine best practice. Questionnaires were posted to all members of the Vascular Society investigating clopidogrel use at the time of CEA, 52% discontinue clopidogrel preoperatively, with 51% of those using no alternative and 49% replacing it with aspirin. Clopidogrel use is not related to the number of endarterectomies performed by each surgeon.

There is no consensus on clopidogrel use during CEA. This highlights the need for quality prospective data on this subject.

© 2007 European Society for Vascular Surgery. Published by Elsevier Ltd. All rights reserved.

Keywords: Clopidogrel; Antiplatelet agents; Carotid endarterectomy; UK Carotid Endarterectomy database; Carotid endarterectomy complications.

Introduction

Clopidogrel is a drug commonly encountered in patients presenting for carotid endarterectomy (CEA). It is, however, associated with an increased risk of bleeding, and the manufacturers advise caution with its use around the time of elective surgery. They recommend stopping clopidogrel for 5 to 7 days prior to elective surgery unless an anti-platelet effect is desired.

Currently there is no consensus amongst surgeons regarding the use of clopidogrel at the time of CEA where the risk of increased bleeding must be balanced against the risk of perioperative cerebrovascular events. There is no published evidence demonstrating an association between clopidogrel and either beneficial or harmful effects at the time of CEA.

Report

The aim of this study was to assess current practice of members of the Vascular Society regarding the use of clopidogrel around the time of CEA. A questionnaire was sent to all consultants who were members of the Vascular Society in 2004. A record was kept of respondents and the questionnaire was sent once only. Respondents were asked how many carotid endarterectomies they performed annually along with questions directly related to their policy on clopidogrel.

From a total of 365 questionnaires sent, 235 were returned giving a response rate of 64.5%. All respondents were consultant vascular surgeons and 49 did not perform CEA.

Of the 186 surgeons who performed CEA, 17% (n = 33) performed less than 10 cases annually, 63% (n = 117) performed 10 to 30 and 20% (n = 36) performed greater than 30. Surgeons were asked about their policy on clopidogrel use at the time of CEA. If a patient were on clopidogrel alone, 48% (n = 89) would continue it whilst 52% (n = 97) would discontinue it. Those who continued clopidogrel were asked what they would do if a patient was on both clopidogrel and aspirin before CEA.

40% (n = 35) would continue both, 52% (n = 47) would discontinue clopidogrel and 8% (n = 7) would discontinue clopidogrel and use an alternative agent.

*Corresponding author. Mr. A. J. Jackson, Glasgow Royal Infirmary, Peripheral Vascular Unit, c/o Ward 63, 16 Alexandra Parade, Glasgow G13 2ER, UK. E-mail address: aj.jackson@doctors.org.uk

© 2007 European Society for Vascular Surgery. Published by Elsevier Ltd. All rights reserved.
Of the surgeons who discontinued clopidogrel, 49% (n = 47) replaced clopidogrel with aspirin and 51% (n = 50) used no alternative. Those who changed clopidogrel to aspirin were asked what they would do if the patient was genuinely aspirin intolerant. 36% (n = 17) would continue with clopidogrel, 49% (n = 23) would discontinue clopidogrel and 15% (n = 7) would seek an alternative agent. These results are summarised in (Fig. 1).

The number of CEAs performed annually by each surgeon was matched to clopidogrel prescription to determine whether volume of cases influenced practice. There was no correlation between CEA case volume and clopidogrel policy (Fig. 2).

**Discussion**

The use of clopidogrel around the time of CEA is contentious, with some surgeons continuing it to help prevent thrombotic events, and others stopping it to avoid the risk of perioperative bleeding. We surveyed the vascular surgical community in the UK to determine whether there was any consensus on this issue. This was a postal study and it produced a 65% response rate. Whilst the limitations of this are accepted, it did generate replies from 235 vascular surgeons, representing a significant cross section of the UK vascular community. It demonstrated that there is no consensus on any aspect of clopidogrel prescription, as each yes or no option produced an equal response for either course of action. In addition, the number of CEAs performed by a surgeon had no bearing on prescribing policy.

There is currently no published evidence linking clopidogrel use with either perioperative vascular events or haematoma formation in carotid endarterectomy. Most data on bleeding risk comes from the cardiothoracic literature where significant increases in chest drain output and re-exploration rates were demonstrated in patients on clopidogrel although this had no effect on peri-operative mortality or length of hospital stay.3,4

There is therefore an urgent need for quality data on this topic. The UK CEA database is a registry of CEA to which all vascular surgeons have been invited to contribute. Part of the data collection deals with antiplatelet use around the time of CEA, whether such agents are discontinued and if so when. It also documents specific complications such as return to theatre for bleeding, perioperative CVA and cardiac events and thus such events will be able to be matched to antiplatelet use. When this study reports there may, therefore, be evidence for the optimal use of clopidogrel at the time of CEA. However, the only way to definitively answer this question is to conduct a prospective randomised control trial. In the meantime, there is, unfortunately, no evidence to determine best practice.

**References**


Accepted 24 April 2007
Available online 18 June 2007