

# Clopidogrel and intraocular surgery: complicated or uncomplicated?

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## Abstract

This case series of 16 patients demonstrates the postoperative complications associated with continued clopidogrel use and intraocular surgery. No intraocular or postoperative complications were noted but a 25% risk of subconjunctival haemorrhage following subtenons anaesthesia was noted.

## Keywords

Clopidogrel; intraocular surgery; intraoperative complications; postoperative complications.

## Introduction

Clopidogrel is a drug that inhibits ADP mediated platelet aggregation pathways and hence its use as an anticoagulant<sup>[1]</sup>. Since the CURE study was published in 2001<sup>[2]</sup>, an increasing number of patients presenting to our department for intraocular surgery have been started on this treatment. We present a case series of 16 patients who underwent intraocular surgery with continued use of clopidogrel and assess the frequency of haemorrhagic complications.

## Case history

A 72-year-old man had recently undergone uncomplicated cataract extraction and lens implantation, using subtenons anaesthesia. Postoperative assessment identified a large subconjunctival haemorrhage. On review of his medication it was found that this gentleman had remained on clopidogrel throughout his operative procedure and that he was not on any other anticoagulants. His only medical and social history to note was cardiovascular disease, which was currently stable.

We identified 16 similar patients over a period of 3 years (2002–2005) who had undergone intraocular surgery whilst remaining on clopidogrel. These patients were on no other adjunctive anticoagulants or non-steroidal anti-inflammatory drugs (NSAIDs). Past medical histories were varied. Cardiovascular disease and associated risk factors were prominent, but no histories of predisposition to bleeding were documented. The patients were from 58 to 82 years of age. Fourteen patients underwent phacoemulsification; two patients had a combined operation of

phacoemulsification and a trabeculectomy. The intraoperative and postoperative complication rate for these cases was 0%.

Of the 16 patients mentioned above, 31% had their operation performed under topical anaesthesia, 38% under a peribulbar anaesthetic, 25% under a subtenons anaesthetic and 6% under a general anaesthetic. The results show that when using a subtenons anaesthetic, there was a 25% risk of complications (large subconjunctival haemorrhage). No obvious source of bleeding was documented.

All other types of anaesthesia mentioned in this case series had a 0% haemorrhagic complication rate.

Combining the anaesthetic, intraoperative and postoperative complication rates, this case series has shown that, in the absence of alternative aetiology, the use of clopidogrel has an overall complication rate of 6%.

## Diagnosis

This case series has shown that the continued use of clopidogrel alone does not predispose a patient to intraocular or postoperative complications. However, there is a small association with complications following the use of subtenons anaesthesia.

## Clinical evidence

Clopidogrel is a relatively new anticoagulant with increasing use following the CURE study. It is commonly used by ophthalmic patients awaiting cataract surgery, because these patients are in an age group where cerebrovascular events are high and hence they benefit from the use of anticoagulant therapy.

Our result of a 25% haemorrhagic complication rate following subtenons anaesthesia in patients continuing to use clopidogrel is echoed in a study by Kumar et al.<sup>[3]</sup> who found a 40% complication rate.

This case series only looks at patients on clopidogrel alone and not using adjunctive anticoagulants such as aspirin, warfarin, or NSAIDs (combined therapy) which have been shown to potentiate their action. Other recent studies by Herbert et al.<sup>[4]</sup> and Davies<sup>[5]</sup> showed that combination therapy can lead to complicated surgeries with associated haemorrhagic events. They concluded that there is an increased risk of bleeding associated with combined therapy compared to aspirin alone. They did not compare the use of clopidogrel against combined therapy.

Other studies involving other anticoagulants such as aspirin have shown that the risks of medical and ophthalmic events surrounding cataract surgery are minimal<sup>[6-11]</sup>, and it is therefore implied that the discontinuation of such anticoagulants is usually not indicated.

However, whether clopidogrel is stopped pre-operatively is dependent on the individual surgeon. A study in the Netherlands showed that 76% of surgeons discontinued anticoagulation therapy pre-operatively<sup>[10]</sup> and the Davies study<sup>[5]</sup>, performed a telephone survey in 2004 which showed that 12 ophthalmic units out of 15 across UK continued with the use of clopidogrel.

## Teaching point

Evidence suggests that there is an increase in haemorrhagic events following ocular surgery on patients using combined therapy. This case series, even though small, does suggest that there is an association with the use of clopidogrel and haemorrhagic complications following subtenons anaesthesia, as previously been reported<sup>[3]</sup>. It does not show an association with intraoperative or postoperative haemorrhagic complications. However, in order to definitively answer whether there is a risk of ocular haemorrhage with continued use of clopidogrel, a randomized control trial would be needed. The problem lies with the complications following cessation of anticoagulation medication in this population. The risk of morbidity and mortality may be increased due to the increased risk of a thromboembolic event. Hence, each operative case needs to be looked at individually and the benefits and risks of operative complication vs. systemic illness assessed in order to provide best patient care.

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