



**A PREREQUISITE FOR ADDRESSING THE THERAPEUTIC DILEMMA OF  
CONTINUATION OF ANTIPLATELET THERAPY FOLLOWING AN INTRACRANIAL  
HEMORRHAGE? – A CASE STUDY REPORT**

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**ABSTRACT**

An intracranial hemorrhage is the bleed within the brain. Many patients with Intracranial hemorrhage may either suffer from history of ischemic events or ischemic pathologies which may frequently require antithrombotic therapy. This case study focuses on a patient with primary intracranial hemorrhage with a risk of thromboembolic pathology, demanding antiplatelet therapy, which is analysed here to illustrate the therapeutic dilemma of prescribing antiplatelets following the intracranial hemorrhage. At the time of admission, considering the severity of bleeding, antiplatelet medications which has been taken by the patient were withheld. Management is then mainly done according to standardized therapeutic management of Intracranial hemorrhage. Patient's condition then improves and the patient is discharged without giving antiplatelets. But in this case, after 4 months the patient started showing thrombotic symptoms like dysarthria, weakness along with elevated blood pressure which increased the demand for antiplatelet therapy and started aspirin 75mg. After 7 weeks, the patients condition deteriorated and was readmitted with hemorrhagic stroke. This case study raises an important question regarding the continuation of an effective and safe antiplatelet medication in high thromboembolic risk patient who is in a post recovery period from an intra cerebral hemorrhage. In our case study we conclude that this particular dilemma requires a higher clinical research attention and a well designed randomized control trial which should be performed to make an authenticated advise to patients.

**KEYWORDS:** Intracranial hemorrhage, antiplatelets, hemorrhagic stroke, thrombo embolic risk, therapeutic dilemma, case study.

**INTRODUCTION**

An Intracranial hemorrhage(ICH) may be spontaneous, precipitated by an underlying vascular malformation or induced by trauma, or related with the use of antiplatelet therapy. Many patients with Intracranial hemorrhage may either suffer from history of ischemic events or ischemic pathologies which frequently requires antithrombotic therapy. This is not surprising as intracranial hemorrhage (ICH), ischemic stroke and myocardial infarction (MI) have some shared risk factors, particularly increasing age and hypertension. Long term use of such blood thinners may increase the bleeding risk and in some cases this will results in producing intracranial haemorrhage(ICH).Some studies shows, patients who experience an intracerebral hemorrhage (ICH) while taking oral antiplatelet therapy tends to have larger hematomas and a worse prognosis compared with patients who are not on antiplatelet therapy. Therefore the use of antiplatelet medications following intracerebral hemorrhage (ICH) is usually perceived as being contraindicated because of the

possibility of increased risk of further bleeding. Clinicians therefore are presented with a therapeutic dilemma whereby treating infers an increased risk of recurrent intracerebral haemorrhage, whereas not treating infers an increase of thrombotic complications.

Despite the importance of this dilemma, there is very little guidance for prescribers as there is a lack of randomized and observational data addressing this issue. This perspective case report regarding intracranial bleed has been done by considering the previous systematic reviews that address this issue together with recently published research findings which focuses to mention the importance of having a well designed randomized control trial for prescribing antiplatelet therapy following ICH.

**THE CASE STUDY REPORT**

A patient with primary intracranial hemorrhage with a risk of thromboembolic pathology, demanding antiplatelet therapy is analysed here to illustrate the

therapeutic dilemma of prescribing antiplatelets following the hemorrhage.

A 69 year old man was admitted with a c/o drowsiness, weakness, severe headache along with urinary incontinence showing an altered behavior with irrelevant talk. His history includes cerebrovascular accident which occurred 14 years back, parkinsonism, Benign prostatic hyperplasia, uncontrolled hypertension, type 2 diabetes mellitus, and hyperlipidemia. He also had a history of minor episode of angina which occurred 4 years back. His personal history shows that he is following a mixed diet preferably non veg and was a known smoker for 22 years and now stopped. He is on dual antiplatelet therapy for 14 years.

He was on clopilet A 150mg (clopidogrel 75 mg+ aspirin 75 mg), aztor 10mg( atorvastatin), cilacar 10mg(clinidipine), nitrocontin 2.6mg BD (glyceryl trinitrate), minipress 2.5mg BD(prazosin), sompraz 20mg BD (esomeprazole ), glycomet 500 mg OD(Metformin), syndopa plus 125 mg (levodopa100mg+carbidopa 25mg) and tadalafil 5mg OD (tadalafil).

On admission time his blood pressure was 185/119 mm Hg which comes down to 130/90 on iv nicardipine 5mg/hr. Motor power examination shows a grade 4/5 weakness for UL and LL.

A computed tomogram of the head demonstrates left paratenorial acute subdural hematoma with an average size of 59mm\*36mm and with a thickness of 9mm along with an acute intra cerebral hemorrhage on left temporal lobe with a midline shift of 4.7mm to right. Evidence shows a hyper dense acute hematoma with intra ventricular extension.

#### MATERIALS AND METHODS

Searches of English language publications were conducted in both MEDLINE and EMBASE. The search used previously developed strategies combining inclusive terms for intracranial hemorrhage, antiplatelet medicines, and observational studies, clinical review. A hand search of the bibliographies of the retrieved articles were analyzed. The articles were screened to exclude irrelevant papers.<sup>[1]</sup> Single case reports were also included

#### RESULTS AND DISCUSSION

Most studies were individual observational studies. We found a systemic review on an Observational Research Studying the Long-Term use of Antithrombotic Medicines Following Intracerebral Hemorrhage. Based on the published observational studies that address this issue, majority of the articles depicts that prescribing antiplatelet agents after ICH was common. Other observational studies illustrates that the rate of subsequent ischemic events was higher than that of recurrent hemorrhages, there is also evidences suggestive

of significant differences in risks associated with antiplatelet use and subsequent ischemic events. One study found a 2-fold reduction in all vascular events (ie, ischemic and hemorrhagic combined) among patients who restarted aspirin after any ICH (52 per 1000 patient-aspirin years versus 113 per 1000 patient-years;  $P=0.04$ ).<sup>[13]</sup> as most of the studies shows less harmful effects restarting of antiplatelet therapy can be advisable.

On contrary studies also elucidates the presence of ICH recurrence when antiplatelets are resumed following ICH. There still remains insufficient evidence to guide prescribers when treating ICH patients with cogent indication for antiplatelet therapy.

#### Addressing the issue

This case raised an important question which is often ignored in practice. Should a patient who seems to have a high thromboembolic risk but is recovering from a potentially fatal intracranial haemorrhage receive antiplatelet agents to prevent future ischaemic (cerebrovascular and other vascular) events? Is there any evidence in favour of or against such therapy?<sup>[11]</sup>

#### Case progression

For this 69-year-old male patient who is in requirement of anti thrombotic therapy for the secondary prevention of thrombotic diseases as he had a history of stroke and cardio vascular events, due to the increased risk of worsening of hemorrhage and poor functional outcome ,the anti thrombotic therapy which was taken by the patient was withheld and management mainly focuses on the control of hypertension and diabetes mellitus along with standardized intra cranial therapeutic managements including evacuation.

Gradually the patient shows an improvement in glassgow coma score from 8 to 13. The blood pressure was become controlled to 120/80mmhg.The STOPBLEED score of this patients at the time of admission was found to be 23 which indicates a severe bleeding risk. The modified rankin scale of this patient was improved from 5 (severe disability) to 2(slight disability) at the time of discharge. From the day of discharge the patients daily activity scale that is barthel index were improved 25 to 75(at 1 month). The patient recovered to some extend with minor disabilities.

After 4 months the patient came in OP with the complaints of altered memory, dysarthria and weakness. His BP also become elevated to 160/116mmhg. Due to the current symptomologies of this patient the physician believed that the patient had a very high risk of thrombotic events and restarted antiplatelet therapy by switching over to aspirin 75 mg replacing the dual antiplatelet therapy once he had. But after 7 weeks he was again readmitted with hemorrhagic stroke with a GCS score of 7. BP shot up to 210/125mmhg. He remained drowsy with weakness of both UL and LL. He

did not make much substantial functional recovery and needed care in a nursing home. Lately he has been showing some signs of improvement.

After studying the current scenario of this patient we are assuming that the haemorrhagic stroke might have occurred due to secondary transformation of ischemic stroke (previously) rather than a primary intracerebral haemorrhage which might be due to improper withholding and resuming of antiplatelet regimen. Therefore this scenario demands a well designed RCT and developing a standardised clinical guidelines for prescribing antiplatelets following ICH in thromboembolic susceptible patients.

### CONCLUSION

In most of the studies the author's concluded that antiplatelet use was not associated with a large increased risk of recurrent intracerebral hemorrhage. Some commentators have taken a more cautious interpretation of the results, suggesting that antiplatelet medicines should only be used following intracerebral hemorrhage in high risk patients and that further data is required.<sup>[15,16]</sup> Others however take the view that this study shows there is no increased risk with antiplatelet medicines following intracerebral hemorrhage. Which means the area is full of uncertainties, and owing to lack of clear evidence, it remains not possible to manage the dilemmas with full confidence. This issue still demands answer to the questions of clinical importance like 1) should antiplatelets can be continued following ICH? 2) timing of starting antiplatelet following ICH 3) which antiplatelet offers low risk for hemorrhagic recurrence and what dose? etc.. In our case study we conclude that this particular dilemma requires a higher clinical research attention and a well designed RCT should be performed to make an authenticated advise to patients.

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