

# EFFECT OF ASPIRIN IN TURP

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## ABSTRACT

**Background:** Many of the patients candidates for TURP, also suffer from cardiovascular disease and are under medications with low dose aspirin. Aspirin withdrawal may result in acute cardiovascular syndrome while its continuation may expose patients to the risk of post-surgical excessive bleeding. There are no guidelines whether to continue aspirin or stop it. This study aims to determine the impact of aspirin on peri-operative and post-operative blood loss.

**Material and Methods:** A total of 160 patients undergoing TURP were divided in two equal groups of 80. Group A continued taking aspirin and group B stopped aspirin 10 days prior to surgery. Bleeding complications during and 10 days post-operatively were recorded.

**Result:** The mean age of patients in group A was 66+/-8.56 and group B 68+/-7.28. Wt of prostate resected in group A 30gm/42mins and group B 32gm/46mins. Per-operatively 8(10%) in group A and 7(8.7%) in group B had severe haemorrhage. In 1<sup>st</sup> 48hrs 23(28.7%) in group A and 12(15%) in group B had severe haemorrhage. Re-admission in 1<sup>st</sup> 10 days was 5(6.2%) in group A and 1(1.2%) in group B.

**Conclusion:** Aspirin should be stopped pre-operatively for the danger of excessive post-op haemorrhage. It is safe to do so in low risk cardiovascular and cerebrovascular patients.

**Key words.** Turp, aspirin, haemorrhage

## INTRODUCTION

It is more than hundred years since the introduction of aspirin to medicine. The cardiovascular benefit of aspirin is known since 1950<sup>1</sup>. Low dose aspirin as anti platelet is widely used both for primary and secondary prevention of thrombo-embolic complication in coronary and cardiovascular system. Also due to ever increasing population receiving percutaneous coronary intervention, more patients require long term anti platelet therapy<sup>2,3,4</sup>. Aspirin as used as primary prevention in individual for whom the ten years risk of first cardiac event is greater than 10%<sup>5</sup>. In secondary prevention aspirin reduces the risk of death immediately after myocardial infarction and in long term reduces the risk of cardiovascular event by 21% and stroke by 25%<sup>6,7</sup>.

About 25% of elderly population is receiving aspirin.<sup>8</sup> Among those are patients who may require prostate surgery, which is a potential hemorrhagic procedure. In this context there exists a dilemma among urologists between stopping antiplatelets pre-operatively in order to reduce the risk of bleeding complications or continuing to protect against the risk of thromboembolic complications<sup>9</sup>. The thromboembolic risk may be more relevant in those as they are elderly

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and are usually associated with co-morbidities like hypertension, obesity and diabetes etc.

Recent evidence suggests that the period of greatest cardiovascular risk is immediately following treatment withdrawal<sup>10</sup>. Not to mention that surgery by itself is a thrombogenic event<sup>11</sup>.

## OBJECTIVE

The aim of this study is to assess the effect of continuing aspirin on peri and post operative hemorrhage from TURP and to compare the effect with patient in whom aspirin is stopped. Also to note any thromboembolic complications arising from aspirin withdrawal.

## MATERIALS AND METHODS

This is randomized study between 2009 and March 2015 on patients requiring TURP and were taking low dose aspirin for primary prevention. The patients were between age 55-75 (mean 67 +/-6) and were divided into two equal groups of 80 patients each. In Group A patients, continued taking aspirin while in group B aspirin was discontinued 10 days before surgery and restarted one week after surgery. Those patients who were either on double antiplatelet or who were considered high risk for thromboembolic phenomenon were excluded from the study.

Also those patients with prostate larger than 80gm or in those whose capsule of prostate was breached during surgery were excluded from the study.

The parameters recorded were age, duration of surgery, weight of prostate resected, any bleeding complications during or 10 days post-operatively. Bleeding

complications was defined as either excessive per or post-operative bleeding that needed prolonged bladder irrigation at higher infusion rate, clot retention resulting in hemoglobin drop of more than 3% or requiring blood transfusion.

NSAIDS were not given during or post-operatively.

## RESULTS

Mean patient age was comparable in both group i-e Group A 66(+/-8.56) years and Group B 68(+/-7.28) years, weight of prostate resected and resection time were also comparable i-e Group A=30gms/42 mins and in Group=32gms/46 mins respectively.

During operation severity of bleeding and need for blood transfusion were also non significant In both groups i-e Group A 8( 10%) patients had severe hemorrhage and 5(6.2%) of them needed blood transfusion due to significant drop in blood pressure. Similarly in

**Table 1:**

	Group A (On Aspirin)	Group B (Off Aspirin)
Age = Mean (SD) year	66 (+/- 8.56)	68 (+/- 7.25)
Wt of prostate resected (Mean)	30 gms	32 gms
Duration of surgery (Mean)	42 min	46 min
Histology = Ca Prostate	6	8

**Table 2:**

	Group A	Group B
Bleeding Per-operative		
Mild	59	64
Moderate	13	9
Severe	8	7
Blood transfusion Per-operative	5	3
Post-Operative Severe Bleeding	23	12
Clot Retention	11	5
Prolonged bleeding "Irrigation after 42 hours"	8	2
Blood transfusion	9	4
Re-admission for hematuria	5	1
Re-operation	0	0
Thromboembolic Complication	0	0

group B 7 (8.7%) patients had severe hemorrhage and 3(3.7%) of the required blood transfusion.

There was significantly more bleeding in the first 48hrs in group A i-e 23 (28.7%)patients and in 9(11.2%) patients blood transfusion was needed. Out of these 11(13.7%) patients went into clot retention and needed clot evacuation with the help of flatus tube and re-insertion of 3-way catheter 8(10%) of the patients needed bladder irrigation into 3<sup>rd</sup> day. In comparison the patients in group B had less post-operative hemorrhage i-e 12 (15 %) patients, 4(5%) of them needed blood transfusion and in 5(7.5%) patients clot retention occurred. Only 2(2.5%) patients required bladder irrigation on 3<sup>rd</sup> post-operative day.

Re-admission for gross hematuria within 10 days was 5(6.2%) patients in group A and 1(1.2%) patients in group B.

There was no incidence of thromboembolic complications.

## DISCUSSION

The primary function of platelets is to stop hemorrhage after tissue trauma or vascular injury<sup>12</sup>. This is a complex response that involves platelet activation, aggregation and release of several mediators that results in the formation of platelet plug and vasoconstriction.

Apart from this beneficial function, inappropriate activation of platelets on exposure to injured endothelium may initiate the formation of intravascular thrombosis and subsequent embolism. This has serious consequences on cardiovascular and cerebral perfusion<sup>13,14</sup>. There is also evidence that platelet plug has a vital role in the formation of atherosclerotic plaque<sup>15</sup>.

Aspirin in low dose is the most popular drug used for antiplatelet activity<sup>16</sup>. It permanently inhibits the cyclo-oxygenase (COX\_1) enzyme, which blocks the pathway of synthesis of thromboxane A2 (a potent platelet aggregation and vasoconstriction)

The onset of action is rapid and because platelets are anuclear therefore they cannot synthesis new enzymes. After stopping aspirin adequate platelet aggregation only occurs when newly formed platelets populates the circulation<sup>17</sup>. It takes about 3 days for circulation to attain adequate hemostasis following aspirin withdrawal<sup>18</sup>, therefore several investigators have suggested stopping aspirin 2-3 days before elective surgery<sup>19,20</sup>

It is indeed a common trend among urologists to stop aspirin and other anticoagulants before prostate surgery in order to reduce blood loss.<sup>22,23,24</sup> In this context a study was conducted among UK urologists to see their trend about aspirin for TURP<sup>25</sup>. It was found that 178 urologists out of total 287 do ask their patients to stop aspirin 8-10 days before surgery for the fear of increased blood loss. About half of these consider

bleeding risk in TURP serious enough to cancel TURP, if aspirin use has inadvertently continued.

In our study we found that the continuation of aspirin was not associated with an increase in hemorrhage during TURP. Although we encountered significant more incidence of bleeding post operatively, that causes complications of clot retention and re-admission. Also more blood transfusion was required in patients who were on aspirin. Our results is similar to a study by Nielson LD et al, who in their randomized double blinded placebo controlled trail<sup>21</sup>, had only experience post-operative increase in hemorrhage and requirement of blood transfusion with aspirin. Similarly in another study conducted by Thurston AR<sup>26</sup>, where they reported more hemorrhage and 2-7 times more increase in need for blood transfusion with aspirin. They have also reported 2 mortalities in this group.

A systemic review and meta-analysis in major surgical procedures has demonstrated that anti-platelets decrease the risk of venous thromboembolism by 50% but at the same time increases the risk of post-operative major bleeding by approximately 50%<sup>27</sup>. Most of thromboembolism occurs within first three days post-operatively. The initiation is thought to occur in part due to increase production of catecholamines from stress of surgery. This increases platelets adhesiveness and decreases fibrinolysis, thus increasing thrombogenesis<sup>28,29</sup>. In short this is a dangerous period for high risk patients to be without antiplatelets cover. Withdrawal of aspirin in this high risk patients is reported to be associated with 2-4 fold increase in acute coronary syndrome high risk patients is clear, but there is minimal evidence of such complications in low risk patients<sup>30,31,32</sup>. As our study involved only low risk patients, having aspirin only for primary prevention, and we did not encounter any thromboembolic complication.

## CONCLUSION

Aspirin should be stopped pre-operatively for the danger of excessive post-operative hemorrhage. It is safe to do so in low risk cardiovascular and cerebrovascular patients.

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