Original Research Paper Anaesthesiology

Efficacy of Tranexamic Acid in Decreasing Blood Loss During Transurethral Resection of the Prostrate

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KEYWORDS :

Introduction :
Benign prostatic hyperplasia (BPH) is a common condition affecting men older than 50 years of age. The historical gold standard for treatment has been trans Urethral resection of prostrate, which is effective procedure but is still associated with risk of bleeding. Factors that influence perioperative blood loss include prostate weight, weight of resected tissue, operating time (resection time), type of anesthesia, skill of the surgeon vascularity of the gland.

Tranexamic Acid (TXA) is a synthetic antifibrinolytic agent. A potent inhibitor of plasminogen and Urokinase activator (plasmin leads to breakdown of fibrin) Due to the anti fibrinolytic effect, the clots are stabilized blood loss is reduced.

Recently studies have shown that TXA is an effective agent for reducing blood loss during operative procedures.

In this study we are trying to investigate the efficacy of tranexamic acid in reducing the amount of blood loss during TURP.

AIM
1. To estimate the amount of blood loss during TURP.
2. To determine the correlation of volume of irrigating fluid used weight of tissue resected and duration of surgery on amount of blood loss.
3. To determine if use of antifibrinolytic, tranexamic acid helps in reduction of blood loss.

Hypothesis :
The intraoperative administration of Tranexamic acid (TXA) reduces blood loss associated during TURP.

Materials and methods:
A Pilot study will be done in forty patients with twenty patients in each group. The final sample size will be decided after power analysis.

Source of patients :

Patients undergoing TURP for Benign Prostrate Hypertrophy at SRM Medical College and Hospital, Kattankulathur.

This study will be submitted to hospital ethics committee for approval.

Inclusion Criteria
Age of patients undergoing TURP for BPH under sub-arachnoid block above 50 years.

Exclusion Criteria
1. Patients having history of allergy to any other medications and previous history of allergy to tranexamic acid.
2. Patients suffering from bleeding disorders.
3. Patients on anticoagulant therapy.
4. Patients having renal impairment.
5. Local anesthetic allergy.
6. Ulcer or infection at skin puncture.

A prospective and randomized single blind, trial will be conducted for forty patients requiring TURP for obstructive urinary symptoms.

The patients will be allocated in two groups.

Group C patients received 10mg/kg Tranexamic Acid intravenous infusion during first half an hour of operation followed by 1mg /hr infusion.

Group P : Patients received 10mg/kg normal saline during 1st hour of operation followed by 1mg /kg infusion.

On the day of surgery,after checking consent and adequate starvation, patient will be brought into the theatre. Monitors (Non invasive blood pressure,Electrocardiogram,Pulse oximeter) will be attached.

Intravenous access will be done and with 500 ml Ringer Lactate will be started at the rate of 20 ml/kg/hour as preloading for spinal anaesthesia.

Patient in sitting position the standardized anesthesia technique of sub arachnoid block is given using 3 cc of injection Bupivacaine 0.5% Heavy under aseptic precautions.

Patient will be positioned in lithotomy. Throughout the procedure, continous intraoperative monitoring will be done.

After the procedure the patient will be shifted to Post operative room and monitoring will be continued, till he is sent to the ward.

MONITORING
1. Pre-operative, heart rate.BP,SpO2 saturation will be recorded.
2. Zero time is the time at which sub arachnoid block is given.

INTRAOP MONITORING

Time (min)	Heart Rate	Blood Pressure	Spo_2 Oxygen Saturation	Intravenous Fluid	Volume of Irrigation Fluid (Glycine)	Resection Time
5						
10						
15						
20						
25						
30						
35						
40						
45						
50						
55						
60						

1. Total resection time
2. Total volume of glycine used (In our hospital the irrigation fluid used is Glycine Solution 3liters bottle, each 100 ml containing

1.5gms.)
3. Total volume of irrigation fluid returned.
4. Mass of tissue resected.
5. Post operative analysis
6. Haematocrit of irrigation fluid returned.
7. Haemoglobin of the patient after 24 hours.

Statistical analysis
The parameters recorded will be subjected to statistical analysis to find whether, addition of tranexamic acid is beneficial in reducing blood loss after TURP.

PROFORMA
Name:
Age: Sex : InPatient number:
Date of Admission: Date of surgery

Pre Anesthetic evaluation
(Patients included in this study underwent thorough pre-operative evaluation).

History :
History of underlying bleeding disorders, on anticoagulants, having renal impairment.

Investigations :
- Complete haemogram
- Blood sugar
- Blood Urea, serum creatinine
- Serum electrolytes
- Bleeding time, clotting time
- Electro cardiogram
- Chest x-ray
- Body Weight

Physical examination :
General condition of the patient.

PulseRate Bloodpressure
Patient weight : Spo2

Patients who satisfied inclusion criteria will be explained about nature of study and anesthetic procedure. Written informed consent will be obtained from all patients included in the study. Starvation will be checked.

INTRAOP MONITORING

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4. Mass of tissue resected.

Post operative analysis
1. Haematocrit of irrigation fluid returned.
2. Hemoglobin of the patient at the end of surgery
3. Hemoglobin of the patient after 24 hours.
4. Total intravenous fluid received in 24 hours.