

**Letter to Editor**

**USE OF TRANEXAMIC ACID IN MEGALIPOSUCTION**

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To

The Editor,

Major surgery and trauma trigger similar haemostatic responses. In both situations severe blood loss presents an extreme challenge to the coagulation system. Part of the response to surgery and trauma is stimulation of clot breakdown i.e. fibrinolysis, which might become pathological in some cases [1]. Antifibrinolytic agents reduce blood loss in patients with both normal and exaggerated fibrinolytic responses to surgery. This happens without apparently increasing the risk of postoperative complications [2]. Tranexamic acid is a synthetic derivative of the amino acid lysine that inhibits fibrinolysis by blocking the lysine binding sites on plasminogen [3]. The similarities of tissue injury after trauma and surgery create a novel model for antifibrinolytic therapy with tranexamic acid. The reason of alarming bleeding in liposuction is factors like smoking, diabetes, hypothyroidism, core hypothermia due to infiltration used by the surgeon during surgery, use of drugs like steroids and non steroidal anti-inflammatory drugs by the patient preoperatively. Liposuction involves lots of fluid administration in the form of crystalloid infiltration by surgeon and crystalloid or colloid infusion by anaesthesiologist. There is a loss of volume in the form of lipoaspirate (aspiration of fat done by the surgeon), blood loss & urine output. The anaesthesiologist has to keep a track of all this and ensure that the patient is neither hypovolemic or hypervolemic, both of which can have detrimental consequences in patient outcome and may exacerbate bleeding [4]. Clinical randomization of an Antifibrinolytic in significant haemorrhage or CRASH 2 trial was a large, randomised placebo controlled trial among trauma victims with or at risk of significant haemorrhage [5]. A loading dose of 1 gm over 10 minutes followed by 1 gm over 8 hours was the protocol used for the patients used in this trial. At doses of 10-20 mg/kg administered before surgery, tranexamic acid has been shown to reduce intra operative blood loss and a reduction in blood transfusion rates during hip and knee arthroplasties [6]. The investigators of CRASH 2 trial provided a note of caution in the form of seizures which may occur with higher doses of tranexamic acid which are 2-10 times than those used in CRASH-2. The proposed

mechanism of seizures is due to structural similarity of tranexamic acid to  $\gamma$ -aminobutyric acid which is an inhibitory neurotransmitter. This would be a highly unacceptable complication in liposuction or any form of planned surgery. However, caution is needed before extrapolation of the results of CRASH-2 to surgeries like liposuction until they have been studied in a similarly robust manner. The idea of using tranexamic acid in large volume liposuction is encouraging. However, a randomised control trial is necessary to justify its use and dosage determination in these patients.

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Nil

**CONFLICTS OF INTEREST**

Nil

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