Is topical tranexamic acid a better alternative for selected cases of anterior epistaxis management in the Emergency Department?

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ABSTRACT

Epistaxis is a well-known problem that is mostly self-limited. In certain cases it requires packing or cautery. Tranexamic acid has been tried and has shown promising results. Here we report a case of prolonged epistaxis in a patient on dual anti-platelet agent therapy.

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1. Introduction

Epistaxis is a common problem seen in the Emergency Department (ED), family physician office and urgent care centers [1,2]. The majority of cases are self-limited and direct pressure alone can control the bleeding. Treatment options for prolonged bleeding varies depending on the type of bleeding (anterior versus posterior) as well as the presence of other factors such as hematologic disorders or the use of anticoagulation and/or anti-platelet agents. Some of the treatment options are silver nitrate sticks, packing, endoscopic or surgical ligation [3-8]. One new agent that has been tried is topical tranexamic acid (TXA) [9-13]. Some case reports and a small sample study have shown its effect in treating Epistaxis [13-17]. Here we report a case of prolonged epistaxis in a patient with dual anti-platelet agent.

2. Case report

A 63 year old male with a history of hyperlipidemia, hypertension and coronary artery disease (CAD) with coronary stent taking dual anti-platelet agents (acetylsalicylic acid 81 mg daily and ticagrelor 60 mg twice a day) presented with a 5-hour history of mild to moderate bleeding from left nostril. The bleeding started without any trauma and he tried to stop it by applying direct pressure without success so he came to the ED. He denied dizziness, chest pain, shortness of breath, palpitation, fever or headache. He reported he had similar nasal bleeding in the past and had cautery procedure. The rest of the review of systems was unremarkable. Physical examination revealed the following: a patient with no apparent distress and the following initial vital signs: heart rate: 81 beats per minute; blood pressure: 134/107 mm Hg; respiratory rate: 18 breath per minute; oxygen saturation: 100% on room air and temperature: 97.8° F. Left nostril had friable mucosa without laceration. There was mild oozing from the left nostril around the anterior septum without an arterial pumper. Direct pressure was applied, but bleeding continued. Various therapeutic interventions including anterior or packing with a balloon device, application of Epinephrine and lidocaine combination, or topical TXA were entertained. After explaining the options to the patient a shared decision was made to use TXA. Tranexamic acid exists in different forms (tablet, gel and intravenous solution). We used the only available TXA in our institution at that time which is the liquid form. The solution comes as 1000 mg in 10 mL. Two hundred milligram TAX was escorted over the anterior 1/3 of the rolled up 2 × 2 cm gauze. The left nostril was then packed with the gauze and the patient was asked to apply pressure. Reevaluation after 10 min revealed that the bleeding had stopped. The patient was observed for another hour with no recurrence of bleeding. His complete blood count showed a hemoglobin/hematocrit of 13.5 g/dL/40.3% and his international normalized ratio was 1.1. He was discharged home to follow up with his primary care doctor and if needed with the Ear-Nose-Throat specialist.

3. Discussion

Epistaxis is a common problem seen in the ED. Various technics and equipment have been used to manage the bleeding. The use of TXA for the management of anterior epistaxis has been highlighted in recent years as an effective alternative. Tranexamic acid is a synthetic derivative of the amino acid lysine, which prevents the dissolution of the fibrin clot by binding to plasminogen [18,19]. It has been used in the...
management of obstetric bleeding, gastrointestinal bleeding, orthopedic and dental procedure as well as trauma. It has also been used in bleeding cases from hematologic disorders [15,18,20-25]. A study by Zahed et al. showed a shorter length of stay in the ED, faster bleeding cessation and increased patient satisfaction as well as decreased rebleeding [16,17]. Treating epistaxis with nasal packing and with the commercially available tamponade devices causes pain, and, although controversial, requires use of antibiotics [26–29]. The advantages of TXA are its easy administration, control of pressure application by the patient in order to reduce pain, quick hemostasis, and forgoing the need for antibiotic prescription. Topical application of TXA is ideal in both efficacy and the absence of or negligent rate of systemic side-effects. Tranexamic acid is relatively inexpensive and its use might also be appealing from the perspective of overall cost reduction due to reduced length of stay, reduced ED overcrowding and decreased use of tamponade devices and antibiotics.

We do not advocate the use of TXA on every nose bleed especially those who have no underlying hematological condition or who are not taking anticoagulant and/or anti-platelet agents. Even in those patients with the aforementioned conditions a trial of pressure application should be attempted. However if simple measures do not stop the bleeding then the use of TXA and other options with their advantages and disadvantages should be discussed with the patient.

4. Conclusion

Tranexamic acid is potentially an effective treatment for anterior epistaxis. It leads to rapid cessation of bleeding and reduces length of stay in the ED. In addition, the procedure is pain free, does not require antibiotics prescriptions and leaving the nasal packing in the nostrils and its associated discomfort. More cases and a future randomized control trial with larger sample size are needed to demonstrate the efficacy of its use.

References