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Letter to the Editor

Considerations for Differentiating the Effects of Intravenous and Topical Tranexamic Acid in Liposuction in Future Research Protocols

Jenna R. Stoehr, BA; and Neil A. Fine, MD

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We read with great interest the recently published article entitled "The Combined Effect of Intravenous and Topical Tranexamic Acid in Liposuction: A Randomized Double-Blinded Controlled Trial" by Abboud et al.[1] We commend the authors for their innovative split-breast study where they found that the combination of intravenous (IV) and topical tranexamic acid (TXA) resulted in a decreased amount of decanted plasma in the lipoaspirate and reduced dermal bleeding and ecchymosis than IV TXA alone in patients undergoing liposuction of the breast during reduction mammaplasty.

While the study supports the use of TXA in breast procedures and liposuction, it did not clarify whether IV TXA, topical TXA, or a combination of the 2 leads to improved outcomes. We agree with Dr. Rafael Couto's suggestion that a trial where topical TXA alone is used in one breast could help isolate the effects of topical TXA in tumescent infiltration.[2] While topical TXA has been shown to improve ecchymosis in fat graft donor sites in a retrospective study and to reduce decreases in hematocrit and need for transfusion in abdominal liposuction in a prospective study, it would be of interest to validate these results in a prospective split-breast study.[3,4]

Furthermore, we found that the study design did not truly compare the 2 routes of administration, as the 2 breasts each received different dosages of TXA. The control breast was exposed to the 500 g through IV administration, and the topical breast received an additional 185 mg on average through the topical infiltration, equating to a 37% increase in total body dosage. Thus, it is logical that the breast that received a larger amount of TXA overall had improved outcomes in regard to bleeding, and it cannot be concluded whether the route of administration, local infiltration, caused these observed differences.

To ascertain the differences in outcomes between different routes of TXA administration, a trial may have to diverge from the current design and instead randomly assign patients to receiving IV TXA, topical TXA, or no TXA, to ensure equivalence in dosage that would not be possible in a split-breast study. We would recommend using a standardized total body dosage of TXA, whether it be IV or topical. In our practice and in the literature, we have found 1000 mg IV to be a safe and convenient dosage. It would also be of benefit to objectively measure dermal bleeding by weighing blood loss, as Dr. Couto suggests, and to quantify bruising through a surface area measurement, as shown by Fayman et al.[5]

At our institution currently, the only approved route of administration available is IV. While we are interested in using topical TXA, further evidence is necessary for it to be approved for use. This is likely the case at other academic institutions. Thus, clarification between the routes of administration is warranted to help plastic surgeons access the safest and most effective route and dosage of TXA to reduce bleeding complications. We thank the authors for

From the Division of Plastic and Reconstructive Surgery, Northwestern University Feinberg School of Medicine, Chicago, IL, USA.

Corresponding Author:
Dr Neil A. Fine, Department of Plastic Surgery, Northwestern University Feinberg School of Medicine, Arkes Family Pavilion, Suite 1575, 676 N Saint Clair, Chicago, IL 60611, USA.
E-mail: neilfinemd@gmail.com

their contribution and look forward to their continued exploration into the benefits of TXA.

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