Letter to the Editor
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Effective drug delivery of intradermal tranexamic acid in the treatment of melasma

Melazma tedavisinde intradermal traneksamik asidin etkili ilaç uygulaması

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To the Editor,

The precise, safe, and effective injection delivery of drugs into the human body is a growing concern. This is one of the important issues in pharmacology and pharmaceutics because it is of practical and scientific importance. An original study published by Rao et al.[1] compared the treatment of melasma with external and injectable therapy. The authors did an excellent job and obtained interesting results. The authors and I had a question about the accuracy and efficacy of the dosage of tranexamic acid for intradermal injections. The point is that the authors of the original study intradermally injected tranexamic acid in a certain dosage using insulin syringes at a distance of 1 cm from the location of the melasma[1]. Interestingly, the authors do not consider or describe the leakage of injection fluid from the injection site. This is an unresolved problem that significantly affects the dose accuracy of intradermal injections[2]. When injecting, the needle pierces the soft tissue and enters the intradermal space. Then, pressure is applied to the piston, and the contents of the syringe enter the skin space where the needle tip is located. After the fluid is injected, the syringe with the needle is removed, the needle begins to move backward in the resulting tunnel, which creates pressure, and the injection fluid rushes along the path of the needle; as a result, some of the injection fluid comes out to the skin surface from the injection site and is simply removed with cosmetic disks, tissues, etc. This means that a small portion of the injected drug, leaving the injection site on the skin surface (leakage of injection fluid), does not enter the body[2]. Because the method of injecting the drug does not guarantee high dosage accuracy[3], leakage of the injected fluid is not considered in the dosage calculation and in the study; thus, we cannot speak fully about the accuracy and efficacy of tranexamic acid injection in melasma. Devices that can minimize leakage of the injection fluid from the puncture site during intradermal injections are available. In turn, this will increase the accuracy of the dosage in the initial calculations[4,5]. The accuracy of the doses used in scientific research is an urgent concern and requires further study because all aspects of the study are considered, with which we can obtain more reliable results. Informed consent was obtained.

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Ethics

Informed Consent: It was obtained.
Peer-review: Externally peer-reviewed.

Authorship Contributions

Surgical and Medical Practices: E.S., Ev.S., Concept: I.Y., Design: I.Y., Ev.S, Data Collection or Processing: N.M., Analysis or Interpretation N.M., Literature Search: A.K., Writing: El.S., Ev.S.
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