FROM THE ACADEMY

Guidelines for the use of local anesthesia in office-based dermatologic surgery

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There are an increasing number and variety of dermatologic surgical procedures performed safely in the office setting. This evidence-based guideline addresses important clinical questions that arise regarding the use and safety of local anesthesia for dermatologic office-based procedures. In addition to recommendations for dermatologists, this guideline also takes into account patient preferences while optimizing their safety and quality of care. The clinical recommendations presented here are based on the best evidence available as well as expert opinion. (J Am Acad Dermatol http://dx.doi.org/10.1016/j.jaad.2016.01.022.)

Key words: anesthesia; clinical guideline; dermatology; education; epinephrine; infiltration; local anesthesia; local nerve block; office-based surgery; pain; safety; topical; tumescent.

DISCLAIMER

Adherence to these guidelines will not ensure successful treatment in every situation. Furthermore, these guidelines should not be interpreted as setting a standard of care, or be deemed inclusive of all proper methods of care, nor exclusive of other methods of care reasonably directed to obtaining the same results. The ultimate judgment regarding the propriety of any specific therapy and/or technique must be made by the physician and the patient in light of all the circumstances presented by the individual patient, and the known variability and biological behavior of the disease. This guideline reflects the best available data at the time the guideline was prepared. The results of future studies may require revisions to the recommendations in this guideline to reflect new data.

SCOPE

This guideline addresses the clinical use and safety of local anesthetics (ie, topical, infiltrative, nerve blocks, and infiltrative tumescent) commonly used in office-based dermatologic surgery for adult and pediatric patients. While anxiolytics, sedatives, and other systemic medications may be used for office-based procedures, these methods are not discussed in this guideline because they are forms of systemic and not local anesthesia. Anesthetic toxicity is rare in the dermatologic office setting, and therefore management of local anesthetic

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This guideline was developed in accordance with the Academy's Administrative Regulations for Evidence-Based Guidelines, and followed a strong disclosure and conflict of interest management plan consistent with Institute of Medicine and Council of Medical Specialty Society standards. The authors' conflict of interest disclosure statements appear at the end of this article.

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toxicity is not addressed in this guideline. Other aspects, such as physician and staff certification, credentialing and privileging, facility accreditation, office equipment and set-up requirements, and legal/regulatory compliance, or any other administrative requirements and regulations, fall beyond the scope of this guideline.

METHODS

A work group composed of 8 dermatology experts practicing in office settings and in academic institutions, 1 anesthesiologist, and 1 patient advocate was convened to determine the scope of the guideline, and to identify important clinical questions (Table I) in the use and safety of local anesthesia in office settings. Work group members completed a disclosure of interests, which was periodically updated and reviewed throughout guideline development. If a potential conflict was noted, the work group member recused him or herself from discussion and drafting of recommendations pertinent to the topic area of the disclosed interest.

Evidence was obtained for the clinical questions determined by the work group using a systematic search of PubMed and Google Scholar databases between the years of 1960 and 2014. Searches were prospectively limited to publications in the English language. MeSH terms and strings used in the literature search included: dermatology, skin, office-based surgery, local anesthesia, infiltration, topical anesthesia, lidocaine, tetracaine, prilocaine, marcaine, bupivacaine, etidocaine, mepivacaine, procaine, ester, amide, structure, comparison, efficacy, safety, risk, nerve blocks, tissue, face, head, neck, nose, ear, eye, lid, hands, feet, digits, penis, genitals. pregnancy, pediatrics, pain, tissue absorption, dose, time, slow, fast, volume, pharmacokinetics, serum levels, technique, method, laser, ethyl chloride, symptoms, systemic, toxicity, local anesthetic systemic toxicity (LAST), treatment, prevention, epinephrine, adrenaline, vasoconstriction, hyaluronidase, mixtures, solution, needle, cannula, sodium bicarbonate, pH, infusion rate, and tumescent anesthesia.

A total of 599 abstracts were initially assessed for possible inclusion. After removal of duplicate data and nonrelevant studies, 165 abstracts were retained and used for a secondary, manual search identifying 36 additional relevant studies. Once the full data set of 201 studies was collated, each study was reviewed and ranked based on relevance and the level of evidence for the outlined clinical questions. Evidence tables were generated for these studies and used by the work group in developing recommendations.

The available evidence was evaluated using a unified system called the Strength of Recommendation Taxonomy (SORT) that was developed by editors of the United States family medicine and primary care journals (ie, *American Family Physician*, *Family Medicine*, *Journal of Family Practice*, and *BMJ USA*).[1] Evidence was graded using a 3-point scale based on the quality of methodology (eg, randomized control trial, case control, prospective or retrospective cohorts, case series, etc) and the overall focus of the study (ie, diagnosis, treatment, prevention, screening, or prognosis) as follows:

I. Good-quality patient-oriented evidence (ie, evidence measuring outcomes that matter to patients, including morbidity, mortality, symptom improvement, cost reduction, and quality of life).
II. Limited-quality patient-oriented evidence (ie, lower quality clinical trials, cohort studies, and case control studies).
III. Other evidence including consensus guidelines, opinion, case studies, or disease-oriented evidence (ie, evidence measuring intermediate, physiologic, or surrogate end points that may or may not reflect improvements in patient outcomes).

Clinical recommendations were developed based on the best available evidence tabled in the guideline. The strength of recommendation was ranked as follows:

A. Recommendation based on consistent and good-quality patient-oriented evidence.
B. Recommendation based on inconsistent or limited-quality patient-oriented evidence.
C. Recommendation based on consensus, opinion, case studies, or disease-oriented evidence.

In situations where documented evidence-based data were not available, or showing inconsistent or limited conclusions, expert opinion and medical consensus were used to generate clinical recommendations.

This guideline has been developed in accordance with the American Academy of Dermatology (AAD)/AAD Association Administrative Regulations for Evidence-based Clinical Practice Guidelines (version approved August 2012), which includes the opportunity for review and comment by the entire AAD membership and final review and approval by the AAD Board of Directors.[2] This guideline will be considered current for a period of 5 years from the date of publication, unless reaffirmed, updated, or retired at or before that time.

DEFINITION

The definition of office-based surgery varies by state and regulatory agency. For the purpose of this