A new method to calculate the maximum dose of local anesthetics
Um novo método para calcular a dose máxima de anestésicos locais
Un nuevo método para calcular la dosis máxima de anestésicos locales

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ABSTRACT
The purpose of this correspondence is to present a suggestion of a simple and practical formula to calculate the maximum recommended dose of local anesthetics. We believe that using the proposed formula, it will be easier to calculate the maximum recommended dose.

Descriptors: Local Anesthetics; Drug Dosage Calculation; Clinical Practice Pattern.

LETTER TO EDITOR
Local anesthetics (LA) are drugs used safely in dentistry. In situations where a longer dental procedure is performed, a higher dose of LA is usually used and the risk of overdose may occur. The calculation of the maximum recommended dose (MRD) of LA is ideal in this context¹. However, many professionals and academics often report difficulties in calculating the MRD of LA for each patient. The purpose of this correspondence is to present a simple and practical formula to facilitate this calculation. One should avoid using the formula to determine the MRD of LA in children under 10 kg or in unhealthy patients¹. When the calculation is used in solutions without vasoconstrictor, the value should be rounded up to the nearest half-tube¹. When the dose of LA is limited by the vasoconstrictor, it is necessary to perform another calculation based on the vasoconstrictor and its concentration¹. Below is the formula:

\[ DA = \frac{(M \times B)}{(% \times 18)} \]

\( DA \) – Anesthetic dose;
\( M \) – Patient weight (kg);
\( B \) – Dose of anesthetic solution / kg;
\( % \) - Concentration of the local anesthetic agent.

Example 1: 70kg patient; 4% articaine hydrochloride with epinephrine 1:100.000

\[ DA = \frac{(70 \times 7)}{(4 \times 18)} \]

DA = 490 / 72
DA = 6.8 tubes

Example 2: 70kg patient; 2% mepivacaine hydrochloride with epinephrine 1:100.000

\[ DA = \frac{(70 \times 6.6)}{(2 \times 18)} \]

DA = 462 / 36
DA = 12.8 tubes

In the example 2, the dose of LA exceeded MRD, that is, 400mg of 2% mepivacaine hydrochloride with vasoconstrictor. Therefore, this value is used in the calculation:

70kg patient; 2% mepivacaine hydrochloride with vasoconstrictor

\[ DA = \frac{(70 \times 6.6)}{(2 \times 18)} \]

DA = 400 / 36
DA = 11 tubes

REFERENCES

CONFLICTS OF INTEREST
The authors declare no conflicts of interests.

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