Can dental anesthesia damage your heart?
NetWellness

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By Special to The Plain Dealer
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Is it true that the anesthesia lidocaine can cause heart damage or heart problems? What are the side effects? I don't suffer from heart disease, but I am scared of lidocaine hurting my heart.

Lidocaine is a local anesthetic drug that temporarily interferes with nerve function so that operations can be done painlessly. The original local anesthetic was cocaine but because it has some significant safety issues, it was replaced in the early 20th century by a second-generation local anesthetic drug called procaine, which was marketed with the trade name of Novacaine.

Novacaine had a fairly slow onset of numbing effect when used in the mouth by dentists and was associated with allergic reactions. Thus in the 1950s, lidocaine replaced Novacaine as the premier local anesthetic in dentistry, and it still is the worldwide standard drug to which other local anesthetic drugs are compared.

Lidocaine is the leading local anesthetic in dentistry in the United States. It has an excellent safety profile. In addition to its local anesthetic effect, lidocaine is given intravenously (injected into the vein) specifically to manage certain emergencies with irregular heartbeat (arrhythmias).

Of course, like every drug, too much lidocaine can be harmful. A large overdose of lidocaine, which would be exceedingly unusual in a dentist's office, could lead to inhibition of the brain's normal functioning and cause serious problems such as unconsciousness, decreased breathing and seizures. In even greater overdoses lidocaine can stop the function of the heart's electrical system, causing it to stop beating.

Fortunately in dentistry, to numb a tooth with lidocaine, the dentist typically uses a dose of only 20 to 40 mg of lidocaine. The maximum
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recommended dose for lidocaine is typically in the range of 10 times
greater than the amount needed to numb a tooth.

In medical anesthesiology, the amount of lidocaine to numb the arm or
leg is often near the maximum recommended dose, and therefore more
extensive cardiovascular monitoring and an IV is usually in place before
the physician injects the lidocaine for these medical purposes.

Lidocaine is a very safe drug. Documented cases of an acute allergic
reaction to lidocaine are essentially non-existent. To make the lidocaine
numbing effect last longer, a drug called epinephrine is sometimes added
to the lidocaine.

In large doses, epinephrine can increase the heart rate and blood
pressure, so the dentist must consider the patient’s health when using
this combination. However, lidocaine with epinephrine is the most widely
used local anesthetic in dentistry in the U.S., and its safety record is superb.

The most common reaction to lidocaine or lidocaine with epinephrine is the patient fainting due to
the anxiety associated with the needle used for its injection. Also a brief period of heart
palpitations can occur. Dentists are trained to manage these complications.

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