Novel Topical Composition to Provide Local Anesthesia and Facilitate Radial Artery Cannulation

Published date: March 28, 2017

Technology description

BACKGROUND:

It is estimated that at least 5 million radial arterial catheters are inserted annually in the US, and over 10 million inserted worldwide, for measuring arterial blood pressure, blood gas chemistries, and performing cardiac catheterizations, among other applications. Precise radial artery cannulation is difficult to achieve due to the small size of the radial artery, the potential for spasm (leading to more difficult access to the radial artery), and pain. As such, radial artery cannulation can be stressful on the patient and clinician, so improved methods and compositions to facilitate the procedure and reduce pain are desirable.

TECHNOLOGY DESCRIPTION:

UCSF cardiologists have developed a method for facilitating arterial access by applying a novel topical composition, comprising a vasodilation agent and an anesthetic agent, prior to cannulation. This novel composition causes local increase of the arterial diameter and provides local anesthesia in the patient, without inducing undesirable systemic effects. In Phase I clinical trials with human subjects, the method and topical compoisiton, comprised of nitroglycerin, a vasodilation agent, and lidocaine, an anesthetic agent, increased the radial artery diameter by 25% or more for at least 30 minutes. These effects will enable clinicians to insert radial arterial catheters with greater ease, reduce the risk of spams, and reduce pain experienced by patients undergoing this procedure.

The UCSF investigators will be conducting Phase II and III clinical trials using the topical nitroglycerin and lidocaine composition to reduce radial artery spasm in patients undergoing radial cardic catheterization.

UCSF cardiologists have developed a novel topical anesthetic composition that facilitates radial artery cannulation. This composition can be delivered either as a topical cream or through a transdermal patch and can be co-marketed with radial catheterization sheaths and cannulaes to increase product appeal to clinical users.

In clinical trials, this novel composition causes local increase of the arterial diamter (by 25% or more for at least 30 minutes) and provides local anesthesia in the patient, without inducing undesirable systemic effects, thus enabling clinicians to insert radial arterial catheters with greater ease, reduce the risk of spasm, and reduce pain experienced by patients undergoing this procedure.

Institution

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