



Effect of the digital block on pulse oximetry

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ABSTRACT

This is a prospective study performed in the intensive care unit for medico-surgical emergencies in Military Hospital Mohammed V Rabat - Morocco on 17 patients whose saturation monitoring is impossible. The purpose of our study is to demonstrate the effect of the digital block on some factors affecting the performance of pulse oximetry.

Key words: Digital block, pulse oximetry, arterial oxygen saturation, vasoconstriction.

INTRODUCTION

Since its emergence in the operating rooms and in intensive care units, pulse oximetry has become an indispensable element of patient monitoring. For the caregivers, SpO₂, as measured by pulse oximetry, is a true reflection of the arterial oxygen saturation (SpO₂), which guarantees the safety of the patients (1)

Purpose of the study:

The aim of our study is to point out the effect of digital block on certain factors that affect the performance of pulse oximetry.

MATERIALS AND METHOD

This is a prospective study in intensive care unit for surgical emergencies in the Mohammed V Military Hospital in Rabat- Morocco on 17 patients whose saturation monitoring was impossible due to hypothermia and/or vasoconstriction. Patients with uncontrolled shock despite vasoactive drugs, or carrying dyes or varnish in the fingers were excluded.

Saturation was taken by transmission oximetry, and the digital block realized by a single injection of a mixture of 3 ml solution of anesthetic (lidocaine or bupivacaine) carried by one physician in a standardized manner using the technique of Whetzel [2].

RESULTS AND DISCUSSION

The average age of our patients was 43.7 years, 10 males and 7 females. The admission reasons were: 7 cases of septic shock controlled by vasoactive drugs, 5 severe trauma, 2 severe acute asthmas, one COPD decompensation, one pulmonary embolism, and one acute coronary syndrome with cardiogenic shock.

After completion of the digital block, we were able to get oximeter response in 94% of our patients for an average of nine hours. No complications specific to the digital block were reported.

Discussion:

The performance of pulse oximetry is based on a satisfactory skin perfusion pressure. A condition of low blood flow, hypothermia and / or major skin vasoconstriction can make it difficult to measure SpO₂ (3). The digital block is a simple, fast and inexpensive technique. It induces a vasodilatation of the digital arteries by sympathetic block [4] which makes the reappearance of the oxymetry. The only failure has been described with the septic shock with disseminated intravascular coagulation and distal ischemia.

CONCLUSION

To our knowledge this is the first study in this sense, it seems to be very attractive in extramural medicine when the arterial blood gas is unavailable and the blood saturation unreliable.

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