

Prehospital point of care testing of blood gases and electrolytes — an evaluation of IRMA

ABSTRACT

We found that relying on the patients' pH, pCO₂, and phosphate concentration in life-threatening situations provides more objective information about oxygenation, carbon dioxide, and acid-base regulation than on pulse oximetry and/or capnometry. Furthermore, it allows physicians to correct severe hypokalemia or hypocalcemia in cases of cardiac failure or malignant arrhythmia.

INTRODUCTION

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The purpose of this study was to assess the level of blood gases and electrolytes in the prehospital setting and to assess the potential for this to affect the outcome of an ICU patient's resuscitation. The aim of this study was to assess the level of blood gases and electrolytes in the prehospital setting and to assess the potential for this to affect the outcome of an ICU patient's resuscitation.

Methods: This was a prospective, double-blind, placebo-controlled, parallel-group, randomised, parallel-group, prospective study.

Main outcome measures: The primary outcome was the change from baseline in the percentage of blood gases and electrolytes in the prehospital setting (absolute change). Moreover, the optimization of the electrolyte status, particularly potassium (K) and ionized calcium (Ca²⁺), is essential in managing a developing or demonstrated cardiac failure. The aim of this investigation was to recount our initial encounters with the IRMA Blood Analysis System (DIAMETRICS, ChemoMedica-Austria, Vienna, Austria), which is a prehospital emergency physician system that has been accessible since April 1996 using batteries.

CONCLUSION

Remarkable conclusions The need for prehospital blood analysis in emergency situations arises from various factors, including the limited availability of conventional monitoring methods like pulse oximetry and capnometry for critically ill or severely traumatized patients. The IRMA blood analyzer, which has been available since April 1996, can provide valuable blood gas measurements that are easily transportable and reliable after some corrections. We believe that prehospital blood analyses will become an important part of a well-structured emergency system in the future.