Detection of CO-Poisoning Through Pulse CO-Oximetric Measurement.
Marx F. *Respir Care* 2007; 52(11): 225.

Introduction

Carbon Monoxide(CO) poisoning often presents with non-specific clinical signs and symptoms. Successful treatment of CO poisoned patients hinge upon timely recognition and treatment with O2.The Rad 57 Pulse CO-Oximeter (Masimo Corporation, Irvine,CA) for the rapid noninvasive determination of carboxyhemoglobin saturation (SpCO) has been introduced at Duisburg Fire Department and Emergency Service since February 1st,2007. These cases demonstrate the benefit of rapid recognition of the CO-poisoned patient.

Case 1 – The Emergency staff (ES) responded to a 17-year old female found unconscious in the bathtub. Upon arrival, the staff evacuated the patient from the bathtub. The ES observed a gas-heater on the wall of the bathroom and a smell of smoke. The Rad 57 device was attached and the SpCO was 46%. The patient was given 12 L/min O2 by mask and was transported via air rescue to the nearest HBO chamber. During transport the patient's SpCO was 26 %. The patient is released, following 5 HBO-treatments, one week after the accident without remaining complaints.

Case 2 – The fire unit is called to an apartment fire. Dark smoke is noted under the apartment door. An unconscious patient is found on the kitchen floor and is evacuated from the scene. Subsequently the cause of the smoke, the burning lunch on the oven, is put out. The victim is an 82 year old female who is unconscious and unresponsive to speech or pain, but in good general condition except a blood sugar of 31 mg/dl. Glucose 40% (60 mL) was given IV. Patient remained unconscious despite a blood sugar of meanwhile 91 mg/dl. After 10 minutes of 100 % O2, the Rad 57 was used to obtain a SpCO of 21%. The patient is transported to the HBO facility and after several HBO-treatments and treatment of the diabetes, the patient recovered completely. She was released without any deficits.

Conclusions

These case reports show that in cases of suspected CO-Poisoning, intoxication can be proven with the Rad 57 Pulse-CO-Oximeter. The positive results of increased SpCO show, that triage decisions can be made in the field, so that a special treatment in an HBO centre can be arranged. Current practice in Duisburg is that all patients with an initial SpCO of more than 20% are transferred directly to a Centre of HBO. As demonstrated in these cases, the Rad 57 Pulse CO-Oximeter provides rapid non-invasive assessment of victims and provides information that directly impacts triage and treatment decisions at the emergency scene.