Abstract and Introduction

Abstract

Propofol is a sedative agent gaining popularity for Emergency Department Procedural Sedation (EDPS). However, some institutions across the country continue to restrict the use of propofol secondary to safety concerns. The purpose of our study was to evaluate the complication rate of EDPS with propofol. We conducted a prospective, observational, multi-center study of EDPS patients aged ≥ 18 years, consenting to procedural sedation with propofol. Eighty-two patients from two Level I trauma centers were enrolled between August 1, 2002 and January 31, 2003. Transient hypoxemia was the only noted sedation complication. Nine patients (11%) had brief hypoxemia. The combined average hypoxemia time was 1.2 min (SD 0.4), and in all instances responded to simple airway maneuvers or increased oxygen concentration. No patient required advanced airway maneuvers such as intubation or even positive pressure ventilation. EDPS with propofol seems to be safe in our population.

Introduction

In emergency medicine, sedatives or analgesics are frequently administered during brief, painful procedures (e.g., fracture or dislocation reduction, abscess incision and drainage, wound care, etc.). This is termed "emergency department procedural sedation" (EDPS) and various individual sedatives or a combination of sedatives may be utilized. Propofol is a sedative agent that has recently become popular for EDPS. It has many characteristics that make it attractive for emergency department procedural sedation, including rapid induction of sedation and an extremely short half-life, leaving the patient with no residual sedation soon after the procedure is over. Although the use of propofol during EDPS is increasing, some institutions across the country continue to restrict its use secondary to safety concerns.

We conducted a prospective study to evaluate the complication rate of propofol during EDPS. In addition, we sought to investigate any possible predictors of those patients who might develop sedation events or complications when sedated with propofol.

Materials and Methods

Study Design

This was a prospective, observational study of emergency department procedural sedation with propofol. A convenience sample of eligible, consenting patients was enrolled by one study investigator between August 1, 2002 and January 31, 2003. The convenience sample was based solely on the availability of the study investigator. The investigator, a senior anesthesia resident who is also emergency medicine residency trained and American Board of Emergency Medicine certified, was on a 6-month research sabbatical and was available 24 h a day. The Institutional Review Board (IRB) governing the research at the two study hospitals approved this study.

Study Population and Setting

This study was conducted in the emergency departments (EDs) of two urban, academic, Level I trauma centers with a combined volume of over 200,000 ED visits annually. All adult (≥ 18 years of age) patients undergoing EDPS with propofol were considered for this convenience sample. Our goal was to recruit as many subjects as possible during the 6-month study period. Patients were excluded for drug or alcohol intoxication, pregnancy, inability to give consent (mental status changes, prisoners), significant airway obstructing disease (tumor, severe sleep apnea) or obvious cardiovascular abnormalities (recent myocardial infarction or hypotension). The decision to use propofol for EDPS, and thus include the patient for possible enrollment, was at the discretion of the emergency physician.

Informed consent for this study, obtained before and separate from the specific informed consent obtained for all procedural sedation, was required at both hospitals.

Procedures and Measurements

The emergency medicine attending physician or the supervised emergency medicine resident conducted the procedural sedation with propofol in the usual fashion. Standard monitoring and procedures as required by the EDPS protocols at both hospitals were followed. In addition to the emergency physician, the EDPS protocols at both study sites require an emergency nurse assistant to be in the room to monitor the vital signs, pulse oximetry, and administer the ordered medication.