

# 4<sup>th</sup> International Pharma & Clinical Pharmacy Congress

November 07-09, 2016 Las Vegas, Nevada, USA

## Dexmedetomidine population pharmacokinetics, adverse reactions and their relationship with blood levels in pediatric patients

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**Introduction:** Dexmedetomidine (DXM) is  $\alpha_2$ -adrenergic drug used for sedation, analgesia and as a co-adjuvant in anesthesia, in surgical procedures, radiology, and instrumentation in pediatrics. Bradycardia and hypotension have been described as the main adverse reactions. This drug is advantageous to have little effect on the respiratory system. Studies concerning DXM pharmacokinetics in pediatric patients and their correlation with blood levels and adverse effects are still needed. In the present work, population pharmacokinetics was used to analyze a sample of pediatric patients treated with DXM.

**Objective:** To describe DXM population pharmacokinetics in pediatric patients, to establish any possible correlation between drug blood concentration and adverse effects.

**Materials & Methods:** The study included 32 pediatric patients (ASA I y II), 2.0 to 18 years-old, who underwent minor surgical procedures and received DXM as per the inductor of anesthesia or as sedative, at a doses of 0.7  $\mu\text{g}/\text{kg}$  of body weight in 20 minutes infusion, four blood samples were taken from each patient at different time intervals designated randomly and their pharmacokinetic profile were constructed. Vitals were monitored throughout the entire procedure.

**Results:** No adverse effect was found. Concerning the level of sedation, all patients during surgery reached the Ramsay scale 6 and emerged to level 2. As per the pharmacokinetic parameter obtained in the study are consistent with those previously reported in the literature.

**Discussion:** In this study, no adverse effect was found so we can conclude that the use of DXM is efficient and safe in children and adolescents at a dose of 0.7 mg/kg of body weight.

### Biography

Maria-Gabriela Perez-Guille has studied Medicine from the Universidad Nacional Autonoma de Mexico. She has 30 years of experience in conducting research in the field of Clinical Pharmacology. She has been working at the National Institute of Pediatrics, Mexico as a Researcher in Medical Sciences, Level-D. She is a Member of the Mexican National System of Researchers; Level-I. She has published 41 papers in the field of pharmacology. She is the Director of Medicine students and residents and also a Pharmacology Professor for BSc and MSc students.

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