

## **Identification and Evaluation of Risk Factors for Dexmedetomidine Withdrawal**

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### **Background:**

The purpose of this project is to identify and evaluate risk factors for dexmedetomidine withdrawal, characterized by hypertension and tachycardia upon weaning and discontinuation. Identification of risk factors for dexmedetomidine withdrawal may help guide dexmedetomidine use and management to help prevent of patients experiencing withdrawal.

### **Methods:**

Patients in intensive care units (ICUs) at our institution receiving dexmedetomidine for sedation are being prospectively screened for hypertension or tachycardia following dexmedetomidine weaning and cessation. Mean heart rate (HR) and mean arterial pressure (MAP) over the 6 hours preceding dexmedetomidine administration will be recorded and considered as baseline data, and patients experiencing an increase in  $HR \geq 10$  bpm or  $MAP \geq 10$  mmHg upon weaning and cessation will be identified and considered as potential signs of withdrawal. The primary medical team will be asked to adjudicate whether patients' tachycardia or hypertension is likely related to dexmedetomidine withdrawal. Potential risk factors, including demographics, clinical characteristics, and drug-use related variables, will be evaluated. Stepwise multivariate regression will be used to identify independent risk factors for tachycardia and hypertension upon dexmedetomidine weaning and cessation or provider-adjudicated dexmedetomidine withdrawal. The impact of dexmedetomidine withdrawal on patient outcomes will be assessed by evaluating length of ICU stay, and need for clonidine, or resumption of dexmedetomidine.

### **Results:**

The incidence of dexmedetomidine withdrawal and the potential risk factors for withdrawal will be assessed and presented.

### **Conclusion:**

It is anticipated that this project will help to identify demonstrate the risk factors for dexmedetomidine withdrawal and its impact on patient outcomes.