# INTRAVENOUS VERNAKALANT FOR THE TREATMENT OF NEW ONSET ATRIAL FIBRILLATON AT THE EMERGENCY DEPARTMENT

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***Abstract***

**Background**

A novel option for the treatment of new onset atrial fibrillation has arisen. Vernakalant, an anti-arrhythmic drug which selectively targets early activated potassium channels (IKur) and frequency dependent sodium channels, the latter with a rate dependent effect, acts primarily in the atria. It has been showing promising results for managing atrial fibrillation in the primary care setting, with several trials showing positive short-term effect.

We present our experience with vernakalant at the Department of Emergency Medicine of the Tel Aviv and Hillel Yaffe Medical Centers in Tel Aviv and Hadera.

**Methods**

We studied 46 patients presenting to the emergency departments in two hospitals, the Tel Aviv Sourasky Medical Center and the Hillel Yaffe Medical Center in Hadera with recent onset atrial fibrillation (3-48 hours). All patients were reviewed for the presence of exclusion criteria such as severe aortic stenosis, the use of intravenous class I or class III anti-arrhythmic drug four hours prior to presentation, acute coronary syndrome in the past 30 days, and heart failure. Consecutive patients without exclusion criteria received a primary dose of intravenous 3 mg/kg vernaklant infused over 10 minutes, during continuous monitoring of their blood pressure from the initiation of the drug to two hours after treatment. If no return to sinus rhythm appeared, a second dose of 2 mg/kg was infused after a 15 minute pause, once again during 10 minutes. Patients were also monitored and questioned for possible side effects.

**Results**

We studied 46 patients who presented to the emergency department of two hospitals in Israel, the Sourasky Medical Center in Tel Aviv and the Hillel Yaffe Medical Center in Hadera, who presented with new onset of atrial fibrillation. Of the 46 patients who received the drug, 38 (83%) patients converted to sinus rhythm, with an average time of 15 $\pm$ 6 minutes. 31 of the 38 patients (82%) converted to sinus rhythm after a single dose, and the remaining after a second dose.

No serious adverse effects were observed. Minor side effect included a metallic taste in 6 (13%) patients. Transient hypotension was observed in 1 patient which was treated with one liter saline.

**Conclusion**

Our results support recent findings regarding the efficacy and safety of Vernakalant for the treatment of new onset atrial fibrillation in the emergency department.

These data were presented as part of the 21st Annual meeting of the Israeli Emergency Medicine Association, Tel-Aviv, 27.3.2017