

**P-311**

### **Channelopathies in drowning or near-drowning events in pediatric population**

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Swimming or immersion in water can be a trigger for malignant arrhythmias and sudden death in patients with channelopathies (known or concealed) like long QT syndrome (LQTS) or catecholaminergic polymorphic ventricular tachycardia (CPVT).

#### **Objective**

Detection of cardiac channelopathies in patients admitted for drowning or near-drowning in a Pediatric Intensive Care Unit (PICU).

#### **Methods**

All cases admitted in the PICU for drowning or near-drowning have been revised. When available, ECG has been analyzed and extended genetic panel has been performed when samples were available.

#### **Results**

From 2015 to 2018 our PICU has had 4658 admissions, of which 22 (0,47%) were for drowning or near-drowning events. Fourteen occurred in children that knew how to swim (6-16y). Two died. After comprehensive study including ECG, exercise test and genetic screening, 6/14 were diagnosed of LQTS (4 KCNQ1, 2 negative genetic tests), 2/14 of CPVT (both RYR2+), 1 Brugada syndrome (negative genetic test, drowning occurred during prolonged apnea under water). Five patients had only ECG which was normal, but no further studies were performed.

#### **Conclusion**

Drowning and near-drowning events can mask underneath channelopathies. Comprehensive cardiac study should be performed in all cases, including genetic study that in our sample is positive in 66% of the patients.