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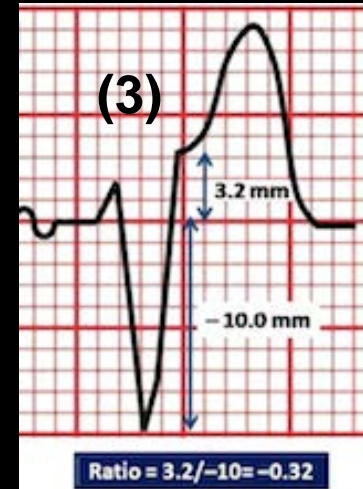
Modified Sgarbossa Criteria for Diagnosis of Acute Coronary Occlusion in ED Patients with Ventricular Paced Rhythm

Preliminary results of the Paced Electrocardiogram Requiring Fast Emergency Coronary Therapy study (#NCT02765477)

Kenneth W. Dodd, Deborah L. Zvosec, Michael Hart, Kendra D. Elm, Brett Boggust, Adesola Oje, Jennifer White, AnnaMarie Chang, Rehan Karim, H. Pendell Meyers, Stephen W. Smith

Introduction

- **Background:** diagnosis of acute coronary occlusion (ACO) in ventricular paced rhythm (VPR) is difficult
- VPR has similar morphology to LBBB, and the modified Sgarbossa criteria (MSC) have high sensitivity and specificity for ACO in LBBB
- MSC consist of ≥ 1 of the following in ≥ 1 lead (see figure):
 - (1) Concordant ST elevation (STE) ≥ 1 mm
 - (2) Concordant ST depression ≥ 1 mm in V1-V3
 - (3) STE/S ratio < -0.25 (in leads with ≥ 1 mm STE)
- **Hypothesis:** MSC are more sensitive for ACO in VPR compared to the original criteria.



Materials and Methods

- **Study Characteristics:** Retrospective, multicenter, international study 2008-2017; data from 4 of 8 sites presented
- **Population:** ED patients with VPR and symptoms of acute coronary syndrome (e.g. chest pain or shortness of breath)
- **Measures:** ECGs measured by blinded physicians
- **Outcome Definitions:** (adjudicated by blinded cardiologist):
 - Acute MI: 3rd Universal Definition
 - ACO: TIMI score 0-1 on angiography
- **Predefined Subgroup:** ACO patients with peak cardiac troponin (cTn) >100 times the 99% upper reference limit (URL) of the cTn assay
- **Statistics:** Mann Whitney U, Chi-square, McNemar's test

Results

ACO (N=15)

	Sensitivity	Specificity
Original SC	46% (22-72)	99% (92-100)
Modified SC	67% (39-87)	99% (92-100)

ACO with Trop > 100xURL (N=10)

	Sensitivity	Specificity
Original SC	60% (27-86)	99% (92-100)
Modified SC	90% (54-100)	99% (92-100)

Population	ACO (N=15)	No AMI (N=79)
Med. Age (IQR)	78 (72-82)	70 (61-75)
Male	13 (86%)	48 (61%)
Med. Trop Ratio (cTn/URL)	260 [33-663]	0.5 [0-1.3]

Conclusions and Discussion

~~Diagnosis:
ELECTRONIC VENTRICULAR PACEMAKER
NO FURTHER INTERPRETATION POSSIBLE
ATYPICAL ECG~~

ACO in VPR is uncommon

The MSC demonstrated good sensitivity for diagnosis of ACO in the presence of VPR, especially among patients with high peak cTn, and Spec was excellent.

The final results of our study will constitute the largest and most methodologically rigorous evaluation of ECG criteria for ACO in VPR to date

Example

