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Atrial Arrhythmias In COVID-19 Patients And The Value Of Ultrasound

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ATRIAL ARRHYTHMIAS IN COVID-19 PATIENTS

Colon CM, Barrios JG, Chiles JW, et al. Atrial arrhythmias in COVID-19 Patients. *JACC Clinical Electrophysiol.* 2020; In press. doi: 10.1016/j.jacep.2020.05.015.

OBJECTIVE

- Analyze electrocardiographs (ECG) and telemetry to better understand the occurrence and impact of atrial arrhythmias in patients with the SARS-CoV-2 (COVID-19) infection

METHOD

- Observational analysis of 115 patients with COVID-19 admitted to the University of Alabama Birmingham Hospital (69 to intensive care unit, 46 to general ward)

RESULTS

16.5% of all admitted patients developed atrial tachyarrhythmias during their hospital stay (100% of those admitted to intensive care unit vs. 0% of those admitted to general ward)

Of the atrial tachyarrhythmia patients:

- **63.1%** had atrial fibrillations
- **79.0%** needed vasopressors to regulate blood pressure
- **52.6%** became hemodynamically compromised
- **26.3%** ultimately died

Strong association existed between developing atrial arrhythmias and needing mechanical ventilation (*P*=0.0002)

KEY TAKEAWAYS

- Atrial arrhythmias are common in COVID-19 patients admitted to the intensive care unit and not common in COVID-19 patients admitted to the general ward.
- Atrial arrhythmias in severely ill COVID-19 patients were associated with additional serious complications.

ARTICLES WITH SIMILAR RESULTS

Inciardi R, Adamo M, Lupi L, et al. Characteristics and outcomes of patients hospitalized for COVID-19 and cardiac disease in Northern Italy. *European Heart Journal*. 2020;41(19):1821-1829. doi:10.1093/eurheartj/ehaa388.

MEDICAL SOCIETY GUIDANCE ON CARDIAC IMAGING DURING COVID-19

- A recent statement by the **American Society of Echocardiography (ASE)** has advised that transesophageal echocardiograms (TEE) increase the risk of exposure to COVID-19.
- A growing number of **medical societies are cautioning against the use of TEE and recommending alternative imaging modalities such as ultrasound for cardiac procedures.**
- Read the ASE statement here: https://www.asecho.org/ase-statement-covid-19/.

FORWARD TO A FRIEND

THE USE OF INTRACARDIAC ECHOCARDIOGRAPHY (ICE) CATHETERS IN ENDOCARDIAL ABLATION OF CARDIAC ARRHYTHMIA: META-ANALYSIS OF EFFICIENCY, EFFECTIVENESS, AND SAFETY OUTCOMES

Goya M, Frame D, Gache L, et al. The use of intracardiac echocardiography catheters in endocardial ablation of cardiac arrhythmia: Meta-analysis of efficiency, effectiveness, and safety outcomes. *J Cardiovasc Electrophysiol*. 2020;31(3):664-673. doi:10.1111/jce.14367.

OBJECTIVE

- Assess procedural benefits associated with the use of ICE during catheter ablation of cardiac arrhythmias compared to ablation without the use of ICE

METHOD

- Systematic literature review and meta-analysis
- Identified published studies from 1996-2018 via PubMed/MEDLINE
- Study eligibility: comparative studies that assessed the use of ICE during the catheter ablation of cardiac arrhythmias vs. ablation without ICE use

RESULTS

Use of ICE is associated with:

Reduction in fluoroscopy time

An average **6.95 minute reduction** in fluoroscopy time (*P*<0.01)

12.7 minute reduction in fluoroscopy time when **sensor-based ICE catheters,** such as the SOUNDSTAR® Catheter, are used (*P*=0.02)

Reduction in procedure time

An average **15.2 minute reduction** in procedure time (*P*<0.01)

A trend of decreased complications was noted with the use of ICE; however, this difference did not reach statistical significance (*P*=0.08).

KEY TAKEAWAYS

- The use of ICE during ablation of cardiac arrhythmias is associated with **lower fluoroscopy time and shorter procedure time** without compromising safety.

ARTICLES WITH SIMILAR RESULTS

Lyan E, Tsyganov A, Abdrahmanov A, et al. Nonfluoroscopic Catheter Ablation of Paroxysmal Atrial Fibrillation. *Pacing Clin Electrophysiol.* 2018;41(6):611-619. doi:10.1111/pace.13321.

FORWARD TO A FRIEND

THERMOCOOL® Navigation Catheters are indicated for the treatment of drug refractory recurrent symptomatic paroxysmal atrial fibrillation, when used with CARTO® 3 Systems (excluding NAVISTAR® RMT THERMOCOOL® Catheter).

Bertaglia E, Bella PD, Tondo C, Proclemer A, Bottoni N, De Ponti R, et al. Image integration increases efficacy of paroxysmal atrial fibrillation catheter ablation: results from the CARTOMERGE® Module Italian Registry. *Europace* 2009;11:1004-1010.

THERMOCOOL® Navigation Catheters are indicated for the treatment of recurrent drug/device refractory sustained monomorphic ventricular tachycardia (VT) due to prior myocardial infarction (MI) in adults

The NAVISTAR® THERMOCOOL® and EZ STEER® THERMOCOOL® NAV Catheters are FDA approved for the treatment of drug refractory recurrent symptomatic paroxysmal atrial fibrillation, when used with compatible three-dimensional electroanatomic mapping systems.

Always verify catheter tip location using fluoroscopy or IC signals and consult the CARTO® 3 System User Guide regarding recommendations for fluoroscopy use. Pellegrino, P.L., Brunetti, N.D., Gravina, D., Sacchetta, D., De Sanctis, V., Panigada, S., Di Biase, L., Di Biase, M., and Mantica, M. (2013). Nonfluoroscopic mapping reduces radiation exposure in ablation of atrial fibrillation. Journal of cardiovascular medicine 14, 528-533.
Earley, M.J., Showkathali, R., Alzetani, M., Kistler, P.M., Gupta, D., Abrams, D.J., Horrocks, J.A., Harris, S.J., Sporton, S.C., and Schilling, R.J. (2006). Radiofrequency ablation of arrhythmias guided by non-fluoroscopic catheter location: a prospective randomized trial. *Eur Heart J* 27, 1223-1229