

Center for Cardiac Arrhythmias

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Members of the research group

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RESEARCH ACTIVITIES

Telemedicine

Research activity on telemedicine carried out by using implantable devices began in the early 2000s. Several projects were conducted on early diagnosis of decompensation and arrhythmic events by means of pace makers and defibrillators. Research activity has expanded to pulmonary pressure monitoring using dedicated implantable devices. We are currently participating in a study evaluating the possibility of integrating information provided by implantable technology and that provided by the patient as part of an overall heart failure patient empowerment project

Resynchronization therapy

Among the first groups in Italy to develop a biventricular pacing program, we specifically studied the physiology of atrioventricular and intraventricular resynchronization by applying invasive monitoring technologies of intracardiac volumes and pressures

Atrial fibrillation

Research activity focused on ablative treatment of atrial fibrillation with special reference to patients with structural heart disease and non-paroxysmal forms, as well as patient populations at high risk of recurrence (especially obese subjects)

DISEASES ON WHICH RESEARCH IS FOCUSED

- **Atrial fibrillation**
- **Ventricular arrhythmias**
- **Heart failure**

- **Resynchronization therapy**

Publication list

1: Brasca FM, Perego GB. Remote monitoring of implantable electronic devices to predict heart failure decompensation. *Expert Rev Med Devices*. 2021 Dec;18(sup1):9-12. doi: 10.1080/17434440.2021.2018298. Epub 2021 Dec 29. PMID: 34913778.

2: Perego GB. Why is PAP guided therapy effective? *Int J Cardiol*. 2018 May 15;259:137. doi: 10.1016/j.ijcard.2017.12.096. PMID: 29579592.

3: Brasca FMA, Menè R, Perego GB. Catheter Ablation for Atrial Fibrillation in Structural Heart Disease: A Review. *J Clin Med*. 2023 Feb 10;12(4):1431. doi: 10.3390/jcm12041431. PMID: 36835964; PMCID: PMC9966488.

4: Achilli A, Turreni F, Gasparini M, Lunati M, Sassari M, Santini M, Landolina M, Padeletti L, Puglisi A, Bocchiardo M, Orazi S, Perego GB, Valsecchi S, Denaro A. Efficacy of cardiac resynchronization therapy in very old patients: the Insync/Insync ICD Italian Registry. *Europace*. 2007 Sep;9(9):732-8. doi: 10.1093/europace/eum143. Epub 2007 Jul 18. PMID: 17636304.

5: Laurenzi F, Achilli A, Avella A, Peraldo C, Orazi S, Perego GB, Cesario A, Valsecchi S, De Santo T, Puglisi A, Tondo C. Biventricular upgrading in patients with conventional pacing system and congestive heart failure: results and response predictors. *Pacing Clin Electrophysiol*. 2007 Sep;30(9):1096-104. doi: 10.1111/j.1540-8159.2007.00819.x. PMID: 17725752.

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8: Styczkiewicz K, Spadacini G, Tritto M, Perego GB, Facchini M, Bilo G, Kawecka-Jaszcz K, Czarnecka D, Malfatto G, Parati G. Cardiac autonomic regulation in patients undergoing pulmonary vein isolation for atrial fibrillation. *J Cardiovasc Med (Hagerstown)*. 2019 May;20(5):297-305. doi: 10.2459/JCM.0000000000000791. PMID: 30921268.

9: Achilli A, Peraldo C, Sassari M, Orazi S, Bianchi S, Laurenzi F, Donati R, Perego GB, Spampinato A, Valsecchi S, Denaro A, Puglisi A; SCART Study

Investigators. Prediction of response to cardiac resynchronization therapy: the selection of candidates for CRT (SCART) study. *Pacing Clin Electrophysiol.* 2006 Dec;29 Suppl 2:S11-9. doi: 10.1111/j.1540-8159.2006.00486.x. PMID: 17169127.

10: Cipriani M, Lunati M, Landolina M, Proclemer A, Boriani G, Ricci RP, Rordorf R, Matassini MV, Padeletti L, Iacopino S, Molon G, Perego GB, Gasparini M; Italian ClinicalService Project Investigators. Prognostic implications of mitral regurgitation in patients after cardiac resynchronization therapy. *Eur J Heart Fail.* 2016 Aug;18(8):1060-8. doi: 10.1002/ejhf.569. Epub 2016 Jul 13. PMID: 27412374.

11: Landolina M, Perego GB, Lunati M, Curnis A, Guenzati G, Vicentini A, Parati G, Borghi G, Zanaboni P, Valsecchi S, Marzegalli M. Remote monitoring reduces healthcare use and improves quality of care in heart failure patients with implantable defibrillators: the evolution of management strategies of heart failure patients with implantable defibrillators (EVOLVO) study. *Circulation.* 2012 Jun 19;125(24):2985-92. doi: 10.1161/CIRCULATIONAHA.111.088971. Epub 2012 May 24. PMID: 22626743.

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13: Caravita S, Baratto C, Perego GB, Cecchi F, Crotti L, Parati G. Invasive Hemodynamics of Hypertrophic Cardiomyopathy: Exercise Versus Isoproterenol. *Circ Heart Fail.* 2020 Jun;13(6):e007000. doi: 10.1161/CIRCHEARTFAILURE.120.007000. Epub 2020 Jun 2. PMID: 32482090.

14: Pieragnoli P, Perego GB, Ricciardi G, Sacchi S, Padeletti M, Michelucci A, Valsecchi S, Padeletti L. Cardiac resynchronization therapy acutely improves ventricular-arterial coupling by reducing the arterial load: assessment by pressure-volume loops. *Pacing Clin Electrophysiol.* 2015 Apr;38(4):431-7. doi: 10.1111/pace.12585. Epub 2015 Jan 28. PMID: 25628069.

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16: Perego GB, Iacopino S, Pieragnoli P, Verlato R, Arena G, Molon G, Rovaris G, Manfrin M, Mantica M, Senatore G, Stabile G, Bertaglia E, Brasca F, Tondo C; ClinicalService 1STOP project investigators. Cryoballoon Ablation in Patients With Paroxysmal Atrial Fibrillation: An Evaluation of Cohorts With and Without Structural Heart Disease. *Heart Lung Circ.* 2020 Jul;29(7):1078-1086. doi: 10.1016/j.hlc.2019.07.020. Epub 2019 Sep 18. PMID: 31594723.

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- 18: Perego GB, Landolina M, Vergara G, Lunati M, Zanotto G, Pappone A, Lonardi G, Specca G, Iacopino S, Varbaro A, Sarkar S, Hettrick DA, Denaro A; Optivol-CRT Clinical Service Observational Group. Implantable CRT device diagnostics identify patients with increased risk for heart failure hospitalization. *J Interv Card Electrophysiol*. 2008 Dec;23(3):235-42. doi: 10.1007/s10840-008-9303-5. Epub 2008 Sep 23. PMID: 18810621.
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- 22: Bertaglia E, Iacopino S, Verlato R, Arena G, Pieragnoli P, Tondo C, Molon G, Manfrin M, Perego GB, Rovaris G, Rivezzi F, Mantica M, Startari U, Sciarra L. Safety and efficacy of cryoablation for atrial fibrillation in young patients: A multicenter experience in the 1STOP project. *Clin Cardiol*. 2023 Feb;46(2):142-150. doi: 10.1002/clc.23951. Epub 2022 Nov 29. PMID: 36448243; PMCID: PMC9933101.
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27: Santini M, Ricci RP, Lunati M, Landolina M, Perego GB, Marzegalli M, Schirru M, Belvito C, Brambilla R, Guenzati G, Gilardi S, Valsecchi S. Remote monitoring of patients with biventricular defibrillators through the CareLink system improves clinical management of arrhythmias and heart failure episodes. *J Interv Card Electrophysiol.* 2009 Jan;24(1):53-61. doi: 10.1007/s10840-008-9321-3. Epub 2008 Oct 31. PMID: 18975066.

28: Catanzariti D, Lunati M, Landolina M, Zanotto G, Lonardi G, Iacopino S, Oliva F, Perego GB, Varbaro A, Denaro A, Valsecchi S, Vergara G; Italian Clinical Service Optivol-CRT Group. Monitoring intrathoracic impedance with an implantable defibrillator reduces hospitalizations in patients with heart failure. *Pacing Clin Electrophysiol.* 2009 Mar;32(3):363-70. doi: 10.1111/j.1540-8159.2008.02245.x. PMID: 19272067.

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