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Professional work

I have a PhD-degree and I am an associate Professor in Experimental Cardiology at Lund University. I have been working in the Med Tech Industry between 2008-2019. I have large experience from clinical resuscitation research, evaluating in-hospital-cardiac-arrest mainly in the PCI-lab where I have been driving several studies both in the experimental setting and in the clinical setting with focus on mechanical chest compressions. This work included study management, study-design, ethical approval applications, surgical operation and instrumentation (in experimental research), data analysis, statistical analysis and manuscript writing. I have also worked with several ambulance organizations regarding resuscitation research on out-of-hospital-cardiac-arrest where I designed, planned, and executed experimental, pre-clinical, usability, and clinical study protocols leading to scientific publications as well as attended and presented results at scientific conferences. I have participated in development of several patent applications and I am a co-author on 7 patent applications in the field of CPR products. In my work in the Med Tech Industry I have also evaluated medical devices in regards of clinical safety and efficacy according to the COUNCIL DIRECTIVE MEDDEV 2.7.1 June 2016, Guidelines on medical devices: CLINICAL EVALUATION: A guide for manufacturers and notified bodies under directive 93/42/ECC and 90/385/ECC, this has been for products in the field of mechanical chest compressions, oximetry, several ventilation products and cooling products.
Before my start at the in the Med Tech Industry my working history started out with work as a paramedic in 1985 in my home town Trollhättan. This was followed by studies to registered nurse at Lund University (1988) after which I have been clinically active in all areas of clinical cardiology. My work has mainly been in the cath-lab specializing in electrophysiology, angiography, PCI, hemodynamics and echocardiography. In 1992 I started working with scientific studies as a research nurse and was involved in studies relating to technology development, experimental research (I have worked with and developed animals models using pigs, rats and rabbits), quality of life research, registry research and clinical trials, during which I developed many of my research skills in close collaboration with physicians, PhD's and engineers at the Department of Cardiology. In 2003 I started my PhD studies at the Department of Cardiology, Faculty of Medicine at Lund University where I worked with and developed the project "Ultrasound enhanced thrombolysis" and I graduated in December 2005. This period was followed by 50% clinical work at the echo-lab and 50% as project manager for the project "Ultrasound enhanced thrombolysis" until 2008. I have been and are working as an instructor for ALS and basic-CPR for nurses, medical students and physicians at the Skåne University Hospital, Lund
I have also got the opportunity to work as an assistant supervisor for two PhD students at the Department of Cardiology, Faculty of Medicine at Lund University, of which both defended their PhD thesis successfully. This gives me very useful knowledge since it enables me to keep up with Cardiology research in general.
During my free time I spend most of the time with my wife and family following our children's activities but keep me physically fit by training and mentally by painting watercolor (My merits as watercolor artist has another curriculum vitae, since it takes to much space).

Employment

Associate professor
Cardiology
Lund University
Lund, Sweden
2019 Feb 19 → present

Associate professor
Clinical Sciences, Helsingborg
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2020 Jan 31 → present

Research outputs

Long-term adherence to flecainide as a rhythm control therapy in recurrent atrial fibrillation – a retrospective cohort study
Siotis, A., Johansson, S., Graff, C., Madsen Härdig, B. & Platonov, P., 2025 Jun 26, In: Scandinavian Cardiovascular Journal. 59, 1, p. 1-10

Study of risk factors for injuries due to cardiopulmonary resuscitation with special focus on the role of the heart: A machine learning analysis of a prospective registry with multiple sources of information (ReCaPTa Study)
García-Vilana, S., Kumar, V., Kumar, S., Barberia, E., Landín, I., Granado-Font, E., Solà-Muñoz, S., Jiménez-Fàbrega, X., Bardají, A., Madsen Hardig, B. & Azeli, Y., 2024 Mar, In: Resuscitation Plus . 17, 100559.

Transthoracic impedance variability to assess quality of chest compression in out-of-hospital cardiac arrest
Magliocca, A., Castagna, V., Fornari, C., Zimei, G., Merigo, G., Penna, A., Carlson, J., Fumagalli, F., Stirparo, G., Migliari, M., Coppo, A., Sechi, G. M., Grasselli, G., Hardig, B. M. & Ristagno, G., 2024, In: Acta Anaesthesiologica Scandinavica. 68, 4, p. 556-566

Does Point-of-care Ultrasound Improve Survival when Used During Cardiac Arrest? A Systematic Review and Meta-analysis
Ventorp, S., Wagner, H. & Härdig, B., 2023 Jan 1, In: Medical Research Archives. 11, 8, p. 1-18

A Scoping Review on The Use of Extracorporeal Cardiopulmonary Resuscitation for Refractory Out-Of-Hospital Cardiac Arrest
Nikolov, K., Wagner, H. & Madsen Härdig, B., 2023, In: International Journal of Clinical Cardiology and Cardiovascular Interventions. 2, 4, p. 1-14

Chest wall mechanics during mechanical chest compression and its relationship to CPR-related injuries and survival
Azeli, Y., Barberia, E., Fernández, A., García-Vilana, S., Bardají, A. & Madsen Härdig, B., 2022 Jun, In: Resuscitation Plus. 10, p. 1-8 100242.

FDA Clinical Investigator Inspection List, who is Inspected and What are the Results for Countries Outside US?
Härdig, B. & Platonov, P., 2022 Jan 1, In: Medical Research Archives. 10, 11, p. 1-17

Mechanical active compression-decompression versus standard mechanical cardiopulmonary resuscitation: A randomised haemodynamic out-of-hospital cardiac arrest study
Berve, P. O., Hardig, B. M., Skålhegg, T., Kongsgaard, H., Kramer-Johansen, J. & Wik, L., 2022, In: Resuscitation. 170, p. 1-10 10 p.

β-blockers after myocardial infarction and 1-year clinical outcome - A retrospective study
Hagsund, T., Olsson, S. E., Smith, J. G., Madsen Hardig, B. & Wagner, H., 2020 Apr 9, In: BMC Cardiovascular Disorders. 20, 1, 165.

Metrics of mechanical chest compression device use in out-of-hospital cardiac arrest
Levy, M., Kerin, K. B., Yost, D., Chapman, F. & Madsen Härdig, B., 2020, In: Journal of the American college of emergency physicians open. 1, 6, p. 1214-1221

LUCAS versus manual chest compression during ambulance transport: A hemodynamic study in a porcine model of cardiac arrest
Magliocca, A., Olivari, D., De Giorgio, D., Zani, D., Manfredi, M., Boccardo, A., Cucino, A., Sala, G., Babini, G., Ruggeri, L., Novelli, D., Skrifvars, M. B., Hardig, B. M., Pravettoni, D., Staszewsky, L., Latini, R., Belloli, A. & Ristagno, G., 2019

Jan 1, In: Journal of the American Heart Association. 8, 1, e011189.

Mechanical chest compressions for cardiac arrest in the cath-lab: When is it enough and who should go to extracorporeal cardio pulmonary resuscitation?
Madsen Hardig, B., Kern, K. B. & Wagner, H., 2019, In: BMC Cardiovascular Disorders. 19, 1, 134.

Haemodynamic outcomes during piston-based mechanical CPR with or without active decompression in a porcine model of cardiac arrest
Steinberg, M. T., Olsen, J. A., Eriksen, M., Neset, A., Norseng, P. A., Kramer-Johansen, J., Hardig, B. M. & Wik, L., 2018 Apr 24, In: Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine. 26, 31, 31.

Outcome among VF/VT patients in the LINC (LUCAS IN cardiac arrest) trial—A randomised, controlled trial
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Assessment of increasing intravenous adenosine dose in fractional flow reserve
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Wagner, H., Hardig, B. M., Rundgren, M., Sparv, D., Harnek, J., Götberg, M. & Olivecrona, G., 2016, In: Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine. 24, 1, 4.

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A Chest Compression Quality Evaluation Using Mechanical Chest Compressions under Different Working Situations in the Ambulance
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Force and depth of mechanical chest compressions and their relation to chest height and gender in an out-of-hospital setting.
Beesems, S. G., Madsen-Härdig, B., Nilsson, A. & Koster, R. W., 2015, In: Resuscitation. 91, p. 67-72

Repeated epinephrine doses during prolonged cardiopulmonary resuscitation have limited effects on myocardial blood flow: a randomized porcine study
Wagner, H., Götberg, M., Hardig, B. M., Rundgren, M., Carlson, J., Götberg, M., Sparv, D., Erlinge, D. & Olivecrona, G., 2014, In: BMC Cardiovascular Disorders. 14, 199.

Research in cardiovascular care: A position statement of the Council on Cardiovascular Nursing and Allied Professionals of the European Society of Cardiology
Jaarsma, T., Deaton, C., Fitzsimmons, D., Fridlund, B., Madsen-Härdig, B., Mahrer-Imhof, R., Moons, P., Noureddine, S., O'Donnell, S., Pedersen, S. S., Stewart, S., Stromberg, A., Thompson, D. R., Tokem, Y. & Kjellstrom, B., 2014, In: European Journal of Cardiovascular Nursing. 13, 1, p. 9-21

A Structured Approach for Treatment of Prolonged Cardiac Arrest Cases in the Coronary Catheterization Laboratory Using Mechanical Chest Compressions
Wagner, H., Rundgren, M., Hardig, B. M., Kern, K. B., Zughaft, D., Harnek, J., Götberg, M. & Olivecrona, G. K., 2013 Jul 28, In: International journal of cardiovascular research. 02, 04

Self-Treatment Techniques in Patients with Paroxysmal Atrial Fibrillation and the Probable Influence of the Autonomic Nervous System
Hansson, A., Platonov, P., Carlson, J., Hardig, B. M. & Olsson, S. B., 2013 Mar 28, In: International journal of cardiovascular research. 02, 02

The Study Protocol for the LINC (LUCAS in Cardiac Arrest) Study: A study comparing conventional adult out-of-hospital cardiopulmonary resuscitation with a concept with mechanical chest compressions and simultaneous defibrillation
Rubertsson, S., Silfverstolpe, J., Rehn, L., Nyman, T., Lichtveld, R., Boomars, R., Bruins, W., Ahlstedt, B., Puggioli, H., Lindgren, E., Smekal, D., Skoog, G., Kastberg, R., Lindblad, A., Halliwell, D., Box, M., Arnwald, F., Hardig, B. M., Chamberlain, D. & Herlitz, J. & 1 others, Karlsten, R., 2013 Jan 25, In: Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine. 21, 1, p. 1-9 9 p.

The analgesic effect of oxygen during percutaneous coronary intervention (the OXYPAIN Trial).
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Evaluation of coronary blood flow velocity during cardiac arrest with circulation maintained through mechanical chest compressions in a porcine model
Wagner, H., Hardig, B. M., Steen, S., Sjoberg, T., Harnek, J. & Olivecrona, G., 2011, In: BMC Cardiovascular Disorders. 11

Atrial fibrillatory rate and risk of stroke in atrial fibrillation.
Bollmann, A., Husser, D., Lindgren, A., Stridh, M., Madsen-Härdig, B., Piorkowski, C., Arya, A., Sörnmo, L. & Olsson, B., 2009, In: Europace. 11, p. 582-586

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Direct action on the molecule is one of several mechanisms by which ultrasound enhances the fibrinolytic effects of reteplase.
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Can pulsed ultrasound increase tissue damage during ischemia? A study of the effects of ultrasound on infarcted and non-infarcted myocardium in anesthetized pigs
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Arrhythmia-provoking factors and symptoms at the onset of paroxysmal atrial fibrillation: a study based on interviews with 100 patients seeking hospital assistance.
Hansson, A., Madsen-Härdig, B. & Olsson, B., 2004, In: BMC Cardiovascular Disorders. 4, 1, p. 13-13

The optimal oesophageal pacing technique--the importance of body position, interelectrode spacing, electrode surface area, pacing waveform and intra-oesophageal local anaesthesia
Pehrson, S., Wedekind, T., Madsen-Härdig, B., Holm, M., Res, J. C. J. & Olsson, B., 1999, In: Scandinavian Cardiovascular Journal. 33, 2, p. 103-109