Prospective cohort study on thermal Ablation of malignant liver tumors within the IMAGIO project (A-IMAGIO)

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FACTS & FIGURES – IMAGIO consortium

Start date:	01/05/2023
End date:	31/12/2028
IHI funding:	24.307 k€
Industry contribution:	21.458 k€
Total Cost:	45.765 k€
Project website:	https://imagio-project.eu
Social media:	linkedin/imagio-project

CHALLENGE (IMAGIO project - workpackage 3)

- Percutaneous thermal ablation is a minimally invasive alternative to surgical resection of primary and secondary liver tumours in terms of overall survival, with **better safety outcomes and shorter hospital stays.**
- Large variability in patient selection, treatment planning, ablation equipment, needle guidance and treatment evaluation tools resulted in **significantly differences between reported outcomes worldwide.**
- The objective of the IMAGIO project is to develop a **standardized, accessible, low-complex-high precision, end-to-end solution** for patient selection, treatment planning, needle guidance and treatment evaluation for thermal liver ablation.

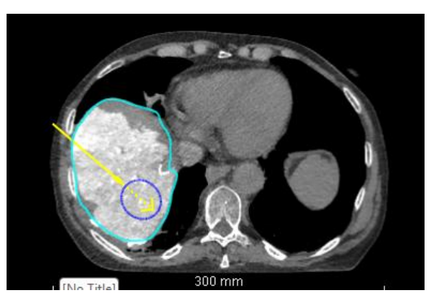
APPROACH & METHODOLOGY (IMAGIO project - workpackage 3)

- Prospective, international, multicenter observational cohort study.
  - Currently enrolling in **nine academic centres**

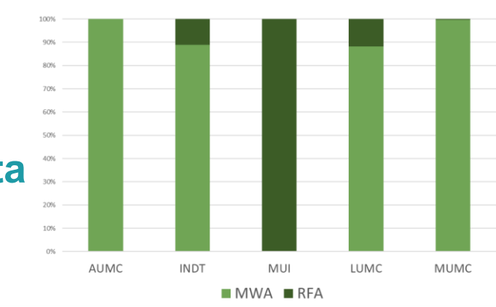
Leids Universitair Medisch Centrum · Maastricht UMC+ · Erasmus MC University Medical Center Rotterdam · Amsterdam UMC Universitair Medische Centra · Radboudumc university medical center · Fondazione IRCCS Istituto Nazionale dei Tumori · Medizinische Universität Innsbruck · UZ Gent · CHUV Centre hospitalier universitaire vaudois

RESULTS (IMAGIO project - workpackage 3)

Patients N=2592 · **Lesions** N=6510 · **Ablations** N=3193



Clinical & imaging data



Large scale international multicentre data are needed to capture workflow variation and identify best standard practice. Associated imaging data can support treatment evaluation and AI model development.

Enabling to do the following workflow-related sub-studies

- Influence of anaesthetic management on liver movement during thermal ablation
- Influence of robotic assistance for needle placement
- Quantification of tissue shrinkage during thermal liver ablation
- Automatic tumour- and ablation zone segmentation for treatment evaluation
- Development of prognostic models to predict recurrence following thermal ablation
- Thermal ablation of rare liver tumours / metastases
- Outcomes of different techniques, used to treat liver tumours in a difficult position

VALUE OF IHI COLLABORATION

The IHI public–private partnership provides an opportunity to combine clinical expertise, academic research, technical expertise, and industry perspectives. Within WP3 of the IMAGIO project, these collaborations have helped us better understand how to identify relevant clinical challenges through close interaction with clinicians and translate them into well-defined research questions. Collaboration with academic and technical experts enabled us to develop AI-based solutions to address these questions, while collaboration with industry partners provides insight into how these solutions can be translated into clinical practice and ultimately benefit patient care. In addition, IMAGIO provides opportunities to communicate our research to patients and society, strengthening the connection between research, healthcare, and the people it aims to benefit.

CAREER IMPACT

This public-private partnership taught us to collaborate across disciplines, bringing together clinical expertise with innovation, technology, AI, and computer science. We learned to translate clinical needs across different fields and work together towards shared objectives. The collaboration also connected us with new people, universities, and companies, providing valuable experience and networks for our future careers.

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