

Impact

Consortium

With an annual number of approximately 1.4 million cases and with 1.1 million of them resulting to death, stroke is the second most common cause of mortality in Europe.

Carotid artery disease:

- is a leading cause of cerebrovascular events and ischaemic stroke,
- causes 150.000 deaths annually,
- leads to over than €12 billion per year in direct and indirect costs, in Europe.



Expected impact of TAXINOMISIS

New models for patient stratification to inform clinical decision-making

Accelerate the translation of biomedical and clinical research results to medical use

Increased cost-effectiveness of the novel concepts in comparison to already established practices

Research and innovation opportunities particularly for small or medium-sized enterprises



A multidisciplinary approach for the stratification of patients with carotid artery disease

Objectives

TAXINOMISIS milestones & innovation!

The 6 main objectives of the project are to:

1

Investigate the causal relationship of the major pathways and factors identified in symptomatic carotid artery disease

2

Study disease phenotypes and disintegrate them into endotypes according to specific pathological mechanisms

3

Integrate a computational model and an agent based model of plaque progression in the risk stratification tool

4

Perform a test for determining the presence of single Nucleotide Polymorphisms and predicting drug response

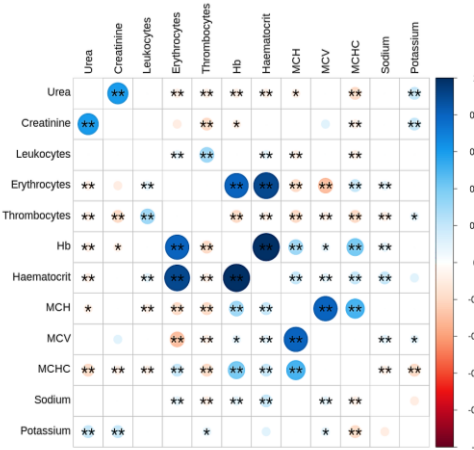
5

Evaluate the risk model of carotid artery disease stratification in an observational multicentre clinical study

6

Present a cost-effectiveness analysis

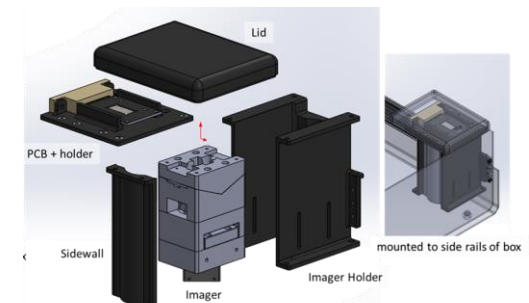
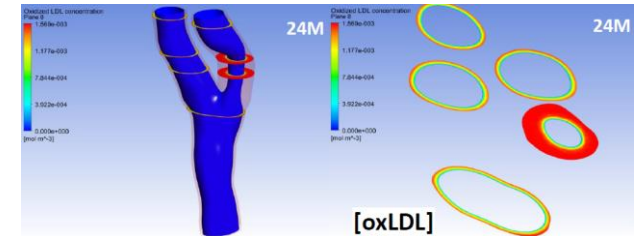
- In TAXINOMISIS, for the first time, proteins, ceramides and plasma cells have been measured in plasma and extracellular vesicle subfractions in a large consecutive cohort of carotid artery disease (CAD) patients and have been associated with major adverse cardiovascular events.



- The architecture of the Risk Stratification Tool has been established.
- The first version of the computational model of plaque progression has been developed using both retrospective data and data from the prospective clinical study.
- The first version of the agent based model of plaque progression has been developed presenting an artificial 3D model of the carotid artery.
- Final run for open fluidics multicavity PCR chips.
- Chips were wire-bonded, awaiting calibration.
- More than 300 patients have been recruited.
- The first year follow up visit is ongoing, although delays occur due to the COVID-19 outbreak



- Potential biomarkers have been evaluated that differ between symptomatic and asymptomatic patients, as well as plaque types.
- Initial results indicate that mmp-8, mmp-9, pcsk9, gdf15, pdgf_bb, urea and potassium have statistically significant difference between asymptomatic and symptomatic patients.
- Models for the classification of CAD patients have shown that many markers which had been characterized as non-important when examined individually, could play an important role when examined together with a set of other markers.



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