



MASTER'S DEGREE IN BIOMEDICAL RESEARCH
Research Project Proposal
Academic year 2024-2025

Project Nº 44
Title: Study of the effect of proton therapy at the myocardial level and its possible cardiotoxicity.
Department/ Laboratory Cardiology Department
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Summary
Radiation to the heart is a widely known complication of classical RT, especially in patients with lymphoma, breast, lung and oesophageal cancer. Changes in the microvascular and macrovascular media, induce rapid atherosclerosis and/or induce fibrosis of the myocardium, pericardium and valves.
In the recommendations of the European guidelines for cardio-oncology, a non-invasive coronary study and echocardiogram are recommended for patients treated with radiotherapy more than five years ago.
As for proton therapy, there are currently no conclusive data to assess its cardiotoxic effect in the short or long term, so consensus documents do not give any kind of recommendation. Although proton therapy is promising, the cardiac effects of such therapy remain to be clarified.
We will perform a retrospective study of patients treated with left thoracic proton therapy and study the presence of cardiovascular disease in this group of patients. We will also carry out a comparative study of this group with another group treated with left thoracic radiotherapy.
Does the project include the possibility of supervised animal manipulation to complete the training for animal manipulator?