

THE USE OF ANNEXIN V LABELED WITH ^{99m}Tc IN THE EVALUATION OF CARDIOTOXICITY INDUCED BY ANTHRACYCLINES

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Introduction: The antineoplastic Anthracyclines are effective agents for various tumors, there is a dose-response relationship for these drugs, however, cardiotoxicity limits their therapeutic potential and threaten the cardiac function of patients.

The mechanism of the onset of cardiotoxicity is still not clarified, the most common hypothesis is related to the triggering mechanisms of programmed death - apoptosis - that promote various morphological and biochemical changes in cells. A very early stage, there is the exposure of phosphatidylserine, a phospholipid that in healthy cells remains in the inner leaflet of the plasma membrane.

This exhibition may be marked through radioactive molecules, as is the case of ^{99m}Tc -Annexin V, the Annexin V is an endogenous human protein, distributed intracellularly, with high affinity for phosphatidylserine.

Objectives: Currently there are various techniques for evaluation of cardiotoxicity, although these have several limitations, such as invasiveness or the late response, so that there is a need to develop non-invasive techniques and enabling the achievement of results as early as possible.

The purpose of this study is to deepen the role and importance of Nuclear Imaging using ^{99m}Tc -Annexin in the context of early evaluation of cardiotoxicity.

Material and Methods: This study consists of a literature review that discusses the radiolabeled tracer techniques, studies *in vivo* and *in vitro* and its impact on clinical practice and treatment of patients.

Conclusions: It will prove that, due to changes that occur in the cell during apoptosis and the high affinity of Annexin V with phosphatidylserine, using the ^{99m}Tc -Annexin V, Nuclear Medicine Imaging allows access to early diagnosis of cardiotoxicity, thus allowing the establishment of new chemotherapeutic regimens, more appropriate, more specific and clearly customized to the patient subject to assessment, thereby contributing to a better prognosis of the same.

Foi decidido que não será apresentada a versão integral deste documento.

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