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Anais: II Seminário de Iniciação Científica

PLATAFORMA INTELIGENTE PARA ONCOLOGIA DE PRECISÃO SEM O USO DE BIOMARCADORES

SMART PLATFORM FOR BIOMARKER-FREE PRECISION ONCOLOGY WITHOUT THE USE OF BIOMARKERS

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RESUMO

1. INTRODUCTION

Breast cancer is considered the most common neoplasm among women, with approximately 74,000 cases estimated in Brazil for the year 2023[1,5]. Given the complexity of this neoplasm, the therapeutic approach depends on the stage of the disease and the specific type of tumor identified[2]. Complete surgical resection with clear margins of the tumor is crucial for a better prognosis for the patient[3,4]). Careful evaluation of the margins during surgery is essential for successful treatment and to prevent cancer recurrence. Therefore, there is a need to improve strategies that contribute to the removal of tumors with cancer-free margins.

2. OBJECTIVE

This project aims to clinically validate the tumor classification model called “Process for Classifying Cells by Lineage and Use," which utilizes

spectroscopic measurements obtained from the interaction of radiation with biological cell samples. These measurements will be processed by an artificial intelligence model to differentiate cell lineages and detect various cancerous lineages.

3. MATERIALS AND METHODS

Tumor tissue will be fixed in buffered formalin and subsequently embedded in paraffin to form blocks. Then, six sections of 3 to 4 micrometers in thickness will be made and placed on slides, with one stained with Hematoxylin and Eosin and the others analyzed by spectroscopy[6]. Patient data will be collected via electronic medical records and correlated with the obtained analyses. Finally, the data will be analyzed using artificial intelligence and machine learning to generate an intelligent predictive system[7]. This study was approved by the institutional ethics committee CAAE: 70737223.0.0000.5121.

4. PRELIMINARY RESULTS

To date, a biorepository of 22 patients, representative of normal and paired tumor tissue, has been obtained, totaling 132 slides.

6. CONCLUSION

Spectroscopy analysis may contribute to optimizing the characterization of surgical margins for breast cancer patients, improving prognosis, and reducing the process costs and time required for diagnosis.

Palavras-chave: Breast cancer; Spectroscopy; Artificial intelligence; Surgical Margins; Machine Learning.

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HEMO insights

AstraZeneca

Uma iniciativa disruptiva para o universo da Hematologia

O **Hemo Insights**, projeto apresentado no **AZHemato**, uma iniciativa inovadora projetada para transformar a forma como os especialistas em Hematologia acessam e compartilham conhecimento.

Criamos um portal digital, repleto de conteúdos e serviços que auxiliarão os hematologistas em seu desenvolvimento científico contínuo.

Nosso objetivo é democratizar o conhecimento em Hematologia, tornando a plataforma acessível a todos os profissionais da área, desde iniciantes até especialistas.

Junte-se a nós na missão de expandir as fronteiras da ciência. Venha explorar tudo o que o projeto tem a oferecer e conecte-se com o futuro da Hematologia!