P03 Expression of stromal elements of prostatic adenocarcinomas in the different Gleason scores

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Osorio C.F., Gallo C.B.M., Costa W.S., De Souza D.B., Sampaio F.

State University of Rio de Janeiro, Urogenital Research Unit, Rio de Janeiro, Brazil

Introduction & Objectives: The objective of this study was to quantify and compare the expression of stromal elements in prostate adenocarcinoma with different Gleason scores with non-tumor tissue (control), corroborating with the data of the parenchyma and the Gleason's classification.

Materials & Methods: We obtained 132 specimens from samples of prostate peripheral and transition zone. We analyzed the following elements of the extracellular matrix: collagen fibers, elastic system, smooth muscle fibers and blood vessels. The tumor area and non-tumor area (control) of the TMA (tissue microarray) were photographed. The images were analyzed using the ImageJ software.

Results: The comparison between the tumor area and the non-tumor area showed significant differences between stromal prostate elements. It was observed an increase of collagen fibers in the tumor area when compared to the non-tumor area, mainly in Gleason 7. Elastic system fibers showed similar result, also from the Gleason 7. In relation to the blood vessels, a significant increase occurred in all analyzed groups. The muscle fibers exhibited a different behavior, with a decrease in relation to the tumor area, with statistical difference in all groups analyzed.

Conclusions: This study revealed that there is a significant difference between the extracellular matrix in prostate cancer compared to the non-tumor area (control) especially in Gleason 7. In addition, our data showed that important modifications of the prostatic stromal elements strongly correlate with different Gleason scores and can contribute to predict the pathological staging of prostate cancer. Also, these data can contribute for the studies of the morphological substrate of prostate cancer applied to new prognostic proposal.

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