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Research Plan 2020

A. RATIONAL: Plasma Cell Myeloma (PCM) is the most common lymphoid disorder, with initial morphological grading and histologic classification by Bartl in 1987. High risk myeloma is stratified by a gene expression panel, but no morphologic correlation has been performed so far. A plasmablastic myeloma cell contains a large central nucleus, and has a high nuclear to cytoplasmic ratio, but despite this also lacks a dominant perinuclear hof. When a plasma cell becomes abnormal, the body creates antibodies to fight it off, but this causes blood to thicken, which leads to the bone marrow not making enough healthy plasma cells. Because of this, the human bone, immune system, and kidneys weaken. Using scoring criteria to predict the development of high or low risk Myeloma can help clinicians more easily diagnose and provide treatment for the cancer. High and low risk Myeloma require different intensities of treatment, where immunotherapy is used for low risk and total therapy is used for high risk Myeloma. Being able to begin the correct chemotherapy earlier on can increase the survival rate of Myeloma patients.

B. RESEARCH QUESTIONS: Is SETD8 or P53 correlated with multiple myeloma tumor growth? Do chromosomal alterations play a role in cancer development?

C. RESEARCH METHODS:

Procedures: To conduct this experiment 60 multiple myeloma biopsy fixed slides with available MyPRS risk scores will be collected from clinicians at Mount Sinai Icahn School of Medicine.

These biopsy samples were given by Mount Sinai clinicians, where each patient involved had to sign a waiver of consent. Additionally, all data will be de-identified and SETD8 and P53 expression, as well as chromosomal alterations, will be recorded. Afterward, Fisher's exact test or Chi-square test will be performed to ensure significance in the data. All statistical analyses will be performed using GraphPad Prism. Multi and univariate analyses will also be performed as well as scoring criteria to determine samples for subsequent testing to predict high risk scores.

Data Analysis: After all information is inputted, the data will be statistically analyzed for correlative associations using chi square tests, Fisher's exact test, and statistical analyses.

Risk and Safety: There is not much safety risk involved in the study as it is entirely analyzing biopsy smears under a microscope and inputting histological data in a de-identified password protected excel G-drive. The microscopy, also, will not be used for diagnostics.

D. BIBLIOGRAPHY:

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THERE ARE NO ADDENDUMS TO THIS RESEARCH PLAN