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Cancer-testis antigens and sex is targeted therapy equal in males and females?

Cancer Testis Antigens (CTAs) are a class of proteins that are expressed in gametogenic cells but generally not in somatic tissues of healthy adults. A number of cancer types have been shown to synthesize these proteins and their expression has been correlated with malignancy development and progression. Ropporin is a specific CTA associated with multiple myeloma (MM) that has been demonstrated as a potential target for MM immunotherapy. Although MM occurs more frequently in men and death rate is significantly lower in women, some of our results show that Ropporin is highly expressed by female patients and that it is associated with poor outcome. It's important to understand the differences between sex and gender and how they interplay in the diagnostic and cancer therapy. Sex is referring to the biology and physiology that defined men and women. On the other hand gender refers to the behavior. One reason is to provide sex and gender-health information during the identification of cancer target can be a very powerful toll. We realized that sex and gender matter to targeted therapy. This study is aimed to illuminate the role of CTA such as Ropporin expression pattern in MM patients and on the study of its association with gender in MM patients. Through a simple retrospective study we have evidenced that among the MM population, Ropporin is highly expressed by female patients, regardless of age at diagnosis. Furthermore, the association was strongly associated with poor outcome. When we have stratifying the patient's population according to Ropporin status, no correlation was seen between sex and outcome. However, MM onset was seen earlier in male than in female only in the Ropporin negative group by Hodges-Lehmann statistic. Furthermore, this evidence indicates that Ropporin is a promising target for MM immunotherapy and its expression could be a predictor of poor survival. Additionally, Ropporin tends to be expressed by female subjects, which are diagnosed later than men in the Ropporin-negative population. Further investigations are warranted in a larger cohort to determine if any targeted therapy can be used as a prognostic factor and therapeutic target in female or male population.

Biography

Maurizio Chiriva-Internati completed his Doctorates in Immunology at the University of Nottingham, UK and Morphological Sciences at the University of Milan, Italy. He completed his Postdoctoral research on tumor immunology and cancer vaccine studies from the University of Arkansas for Medical Sciences. Currently, he is the Director of Basic and Translational Research at the division on Hematology & Oncology at the Texas Tech University Health Sciences Center, School of Medicine, and is a senior editor for the Journal, International Reviews of Immunology. He has published more than 100 papers in peer-reviewed journals and serves as on the Editorial Board of several journals.

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