

POSTER 146

Associação de polimorfismos no gene codificante da proteína C reativa no desenvolvimento de sintomatologia depressiva em mulheres com cancro de mama: implicações médico-legais

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Resumo

Introduction: Women with breast cancer are a population susceptible to the development of depressive symptoms, presenting a higher risk of suicide when compared to women in the general population [1]. Depressive symptoms and breast cancer have common biological pathways and it's possible to find a deregulation of the levels of inflammatory mediators in both pathologies [2,3,4]. **Objetives:** The present study consisted on the analysis of the association of polymorphisms in genes encoding inflammatory mediators and depressive symptoms in women with breast cancer, as a risk indicator for suicide. **Methods:** Therefore, a study was carried out in which the genotypic characterization of the genetic polymorphisms, by real-time PCR, in a population consisting of 105 women with a diagnosis of breast cancer. The depressive symptoms of these women were assessed at three different times. **Results:** In the present study, it was found that, for time 1, women with breast cancer and carrying the CRP genotypes rs2794521 CT + CC, have a higher risk of moderate and severe depressive symptoms (OR = 2.857, P = 0.022). Regarding time 3, it was observed that women with breast cancer

with the CRP rs1205 TT genotype have a decreased risk of moderate and severe depressive symptoms (OR = 0.117, P = 0.044). According to the literature, the C allele of genetic polymorphism CRP rs2794521 is associated with increase in expression of CRP, the increase of which is described in depressive symptoms. Also, regarding the CRP rs1205 genetic polymorphism, the TT genotype is associated with a lower expression of this protein. The increase of continuous exposure to CRP in women CRP rs2794521 CT + CC may contribute to an increased risk of moderate and severe depressive symptoms, since these women are subject, from birth, to a cellular microenvironment with higher levels of this protein as a result of its genetic heritage. In contrast, the lowest continuous exposure to CRP in women with CRP rs1205 TT provides additional protection for the development of moderate and severe depressive symptoms. **Conclusions:** In conclusion, the present study showed the potential of using genetic polymorphisms in inflammatory mediators as potential molecular biomarkers in the definition of genetic risk profiles for the development of depressive pathology and suicide risk.

Keywords: suicide, depressive symptoms, breast cancer; C-reactive protein; genetic polymorphisms

References:

- [1] McFarland DC, Walsh L, Napolitano S, Morita J, Jaiswal R. Suicide in Patients With Cancer: Identifying the Risk Factors. *Oncology (Williston Park)*. 19;33(6):221-6. PMID: 31219606, 2019.
- [2] Brundin L, Bryleva EY, Thirtamara Rajamani K. Role of Inflammation in Suicide: From Mechanisms to Treatment. *Neuropsychopharmacology*.;42(1):271-283, 2017.
- [3] Bortolato B, Hyphantis TN, Valpione S, Perini G, Maes M, Morris G, Kubera M, Köhler CA, Fernandes BS, Stubbs B, Pavlidis N, Carvalho AF. Depression in cancer: The many biobehavioral pathways driving tumor progression. *Cancer Treat Rev*; 52:58-70, 2017.
- [4] Esquivel-Velázquez M, Ostoa-Saloma P, Palacios-Arreola MI, Nava-Castro KE, Castro JI, Morales-Montor J. The role of cytokines in breast cancer development and progression. *J Interferon Cytokine Res. Jan*;35(1):1-16, 2015.