

## Brain Derived Neurotrophic Factor (BDNF) Down Regulation in Peritoneal Carcinomatosis Patients

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**Abstract :** Brain-derived neurotrophic factor (BDNF) is described as a factor helping to support the survival of existing neurons by involving the growth and differentiation of new neurons and synapses. Cancer diagnosis impacts the mental health, and in consequences, depression arise eventually hinders recovery and disrupts the quality of life and surviving chances of patients. The focus of this study is to hint upon a prospective biomarker as a promising diagnostic tool for an early indicator/predictor of depression prevalence in cancer patients for better care and treatment options. The study aims to analyze peripheral biomarkers from neuro immune axis (BDNF, IL21 as a NK cell activator) using co-relation approach. Samples were obtained from random non cancer candidates and advanced peritoneum carcinomatosis patients with 25% pseudomyxoma, 21% Colon cancer, 19% stomach cancer, 10% ovarian cancer, 8% appendices cancer, and 10% other area of peritoneum cancer patients. Both groups of the study were categorized by gender and age, with a range of 18 to 86 years old. Biomarkers were analyzed in collected plasma by performing multiplex sandwich ELISA system. Data were subjected to statistical analysis for the assessment of the correlation. Our results demonstrate that BDNF and IL 21 down regulated significantly in patient groupas compared to non-cancer candidates (ratio of patients/normalis 2.57 for BDNF and 1.32 for IL21). This preliminary investigation suggested that the neuro immune biomarkers are down regulated in carcinomatosis patients and can be associated with cancer expansion and cancer genesis. Further studies on larger cohort are necessary to validate this hypothesis.

**Keywords :** biomarkers, depression, peritoneum carcinoma, BDNF, IL21

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