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Association of 5HTT Gene Polymorphism with response to Treatment and Survival in Cancer; Can it be a prognostic indicator?

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Abstract

Cancer patients with curable/controllable disease who deteriorate without an obvious clinically detectable cause have led researchers to investigate the relation between depression and cancer outcomes. Depression has been associated with unfavourable cancer treatment outcomes as decreased compliance, decreased desire for life-sustaining treatment and increased mortality. Lab studies demonstrated that neurotransmitters are capable of altering immune function whereas immune-derived mediators regulate neuroendocrine and autonomic outflow from the brain. Host cellular defenses against cancer involve immune mediated mechanisms that can be influenced by neurotransmitter activity. Polymorphisms of the 5-HTT gene explain why some individuals develop psychological morbidities on exposure to stressful life events while others exposed to the same conditions don't. This offers a screening criterion for identifying patients at risk for psychological morbidity that might be detrimental to their treatment outcome and may be used as a prognostic indicator and as a patient selection tool for comprehensive psychiatric care during cancer treatment. **AIM:** To study the role of 5HTT gene as a prognostic indicator in cancer. **METHOD**: A longitudinal observational study in which cancer outcomes are compared in two independent cohorts of cancer patients grouped by 5HTT genotype (patients with two long alleles versus those with at least one short allele). **RESULTS:** Cox proportional hazards model showed a significant difference in progression-free survival between the long/long genotype group and the short/short genotype group after correction for age, cancer type and stage (p=0.031). The difference between the long/long genotype group and the short/long genotype group was not statistically significant. There was no statistically significant difference between the groups in objective tumour response rate at six months.

Biography

Noha Awad is a cancer epidemiologist who started her career as a clinical oncologist and completed her clinical training between Egypt and the UK obtaining her PhD from University of Leeds and her MPH from University of Manchester. Since her return to Egypt, Noha has established the University's cancer epidemiology research centre and rolled out two independent research programs supported by the Egyptian Science and Technology Development Fund (STDF). Noha is currently lecturer of cancer epidemiology at the High Institute of Public Health and coordinator of the Egyptian Cancer Research Network.