

Study of memory dysfunction and interleukin-6 in euthymic Egyptian patients with bipolar disorder

Chronic myeloid leukemia (CML) respond dramatically to molecular target therapy; imatinib (IM), a first generation tyrosine kinase inhibitor (TKIs). Quantitation of cytokines like Interleukin-6, Interleukin-7 and Transforming growth factor- α plasma levels before IM therapy, could assess early molecular response (EMR) to IM and predict imatinib failure. A case-control study of 30 CML patients and 30 controls. Levels of IL-6, IL-7 and TGF- α were assayed by ELISA (R&D systems, USA) for both controls and patients. The patients' BCR-ABL1 transcript was assayed by real time-quantitative polymerase chain reaction, using ipsogen® BCR-ABL1 Mber Kit on the Rotor-Gene Q MDx (Qiagen, USA). Cytokines and BCR-ABL1 levels were done both before therapy and at 3 months follow up. Three months following IM therapy, the patients were divided into improved (n= 27) and non-improved (n= 3) groups; based on the establishment of EMR. Plasma levels of IL-7, IL-6 and TGF- α were significantly higher in CML patients ($p < 0.05$). Cytokines plasma levels dropped significantly after IM therapy ($p < 0.05$). Correlation studies revealed a strong positive correlation between pretreatment levels of both IL-6 and TGF- α and post-treatment levels of BCR-ABL transcript ($r = 0.89$ and 0.84 , respectively). IL-7 showed a poor correlation with post-treatment levels of BCR-ABL transcript ($r = 0.32$). Our study revealed a possible role of IL-6, IL-7 and TGF- α as mediators of CML. The initial high levels of IL-6 and TGF- α was associated with the failure of achieving EMR. The initial high levels of IL-7 in CML patients appears to facilitate the disease process.