Clinical Significance of Serum Prohibitin in Chronic Myeloid Leukemia Patients on First-Line Tyrosine Kinase Inhibitors.

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Background

Prohibitin is a widely expressed intracellular protein that is distributed in various compartments, where they exert different biological functions accordingly. Prohibitins have displayed both pro-tumorigenic and antitumorigenic roles in cancer formation. Depending on the type of cancer and the localization of prohibitin, studies have shown that it exerts a different biological role.

Objective

to investigate prohibitin level in Egyptian patients with chronic myeloid leukemia (CML) and to evaluate its correlation with disease activity and response to first-line tyrosine kinase inhibitor treatment.

Materials & Methods

Design: case control prospective study.

Setting: Clinical Haematology division of Internal Medicine Department, Ain Shams University Hospitals.

Patients or other participants: 80 CML patients in the chronic phase. They were matched to 10 healthy volunteers as a control group.

Intervention: Prohibitin level was measured using enzyme-linked immunosorbent assay.

Summary

Prohibitin is overexpressed in CML patients and has a possible impact on disease activity and response to treatment in CML patients that warrants further investigations.

Discussion

we have demonstrated that prohibitin levels were significantly higher in patients with CML than in the control participants (P=0.002). Prohibitin levels were significantly higher in CML patients with an active disease status (P=0.001). In addition, significantly higher levels of prohibitin in CML patients were associated with poor response to first generation TKIs (P=0.001). A serum level of prohibitin higher than 289 is a good predictor for poor response to first generation TKIs as per response assessment by PCR for BCR-ABL (area under the curve=0.67, sensitivity and specificity 58.33 and 80.56, respectively).