SUMMARY

The aim of this work was to verify the correlation at determination of methotrexate by high performance liquid chromatography and imunochemically determination of whole methotrexate. Methotrexate belongs to the chemotherapeutic agent commonly used in the treatment of acute lymphoblastic leukemia. Methotrexate was determined chromatographicly with UV detection at 303 nm after deproteinization with trichloracetic acid. Fluorescence polarization immunoassays of methotrexate was measured on TDx FLx analyzer. The data obtained were analyzed utilizing the PrismGraph Pad 5.0 software. The methotrexate measurements were evaluted employing nonparametric paired t-test (p-value <0,05). Our data indicate good correlation between methotrexate levels > 1 μmol/l determined by high performance liquid chromatography and fluorescence polarization immunoassays. While the concentration of methotrexate < 1 μmol/l measured by fluorescence polarization immunoassays were overestimated. This could be done because of cross reactivity with metabolites 7-hydroxymethotrexate and 2,4-diamino-N^{10}-methylpteroic acid. These metabolites could influence the determination of methotrexate, because of the close stuctural similarities.