RESEARCH PAPER International Journal of Medical Sciences (October, 2009 to March, 2010) Vol. 2 Issue 2 : 101-103

Hyperuricemia and Blood Lipid Levels in Chronic Myelogenous Leukemia

SHAHID A. MUJAWAR AND VINAYAK W. PATIL

See end of the article for authors' affiliation

Correspondence to :
SHAHID A. MUJAWAR
Department of Biochemistry, Grant Medical College and Sir J.J. Group of Govt. Hospitals, MUMBAI (M.S.) INDIA

ABSTRACT

Number of epidemiologic studies has been published in recent year showing an increased risk of death in cancer with lipid abnormality. In the present study, chronic myelogenous leukemia (CML) patients (age 69 ± 7.23 years) with hyperuricemia and healthy controls (age 67 ± 6.93 years) in Sir J.J. Group of Govt. Hospitals, Mumbai displayed significant ($p<0.05$) difference in serum cholesterol, HDL and LDL cholesterol and triglycerides levels. The results of the study suggest cost effective, usefulness of these blood lipids in patients with CML for undiagnosed stages of cancer.

Key words : Blood lipids, Chronic myelogenous leukemia

Accepted : ***May, 2009***

Chronic myelogenous leukemia (CML) is an acquired clonal myeloproliferative disorder originating from malignant transformation at a multipotential stem cell levels. The incidence increases with the age[13]. The cause of CML is unknown, although an increased incidence has been associated with exposure to ionizing radiation and to benzene[8].

Several studies have reported clear relationship between hyperuricemia and cancer[5]. Change in lipid metabolism in tumor tissue associated with a decrease of high density lipoprotein cholesterol in serum, were previously observed in different models of neoplastic proliferation including hematological malignancies [1, 10, 14].

In present study, an attempt has been made to throw light on alteration of blood lipids in patients with CML with hyperuricemia and to correlate these biochemical parameters.

MATERIALS AND METHODS

Present study was carried out in the Department of Biochemistry, Grant Medical College and Sir J. J. Group of Govt. Hospitals, Mumbai. Thirty five patients with CML with age 69 ± 7.23 years and 30 healthy controls with age 67 ± 6.93 years were included. The patients with cardiac disease, hepatic disease, diabetes mellitus, liver disease, and Human Immunodeficiency Virus (HIV) infection were excluded from the study. The details such as history, treatment, report of routine investigations reports were recorded with the help of oncologist.

After 12 hours overnight fasting venous blood samples were collected in test tube with aseptic precautions. After two hours of collections samples were centrifugated at 3000 rpm for 5 minutes. Serum was separated and collected in polythene tube with cork. The sera with no sign of hemolysis used for the analysis of uric acid, total cholesterol, triglycerides, high density lipoprotein (HDL) cholesterol and low density lipoprotein (LDL) cholesterol.

Serum uric acid was estimated using kits from Biolab diagnostic's based on the method of Uricase - PAP method 3. Total cholesterol (TC), triglycerides (TG), and high density lipoprotein (HDL) cholesterol were analyzed by commercial kits 7, 2, 12. All the estimations were carried out on a fully automated analyzer Olympus AU-400. Serum low density lipoprotein (LDL) cholesterol level was estimated by calculation using Friedewald *et al.* (1972) formula[6].

$$\text{LDL cholesterol} = \text{Total cholesterol} - \left(\frac{\text{TG}}{5} + \text{HDL}\right)$$

Statistical analysis:

Numerical variables were reported in terms of mean and standard deviation. Statistical analysis of results was done by Z test. In this analysis, variables showing p value