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DETERMINATION OF EFFICACY OF ASPIRIN IN IHD AND ITS EFFECTS ON LIVER FUNCTIONS.

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Abstract:

Aspirin is the prototype of NSAIDs, that is widely used as an anti aggregant for prophylaxis of ischemic heart disease (IHD), usually is given as 75 mg/d, aspirin is a non-selective COX inhibitor, as well as is the only irreversible inhibitor of COX enzymes. Aspirin is metabolized into acetic acid and salicylates. Hence aspirin can cause salicylism, in which signs and symptoms may range from mild nausea and vomiting, abdominal pain, lethargy, tinnitus, and dizziness to severe such as seizure or cerebral edema depending on the dose consumed. Although very-low-dose (mini-dose) aspirin is used increasingly as a platelet aggregation inhibitor, no studies have been published on whether aspirin's hepatic effects occur at dosages of <0.5 gm/day. The aim of the present study was to evaluate the effects of commonly used mini-dosages of aspirin on hepatic functions in elderly patients for prophylaxis of IHD. About 54 elderly patients are investigated, they were given 75mg, 150 and 325 mg, for about 5 months, CBC and hepatic tests were taken before and after treatment. The serum of blood glucose is also evaluated.

The main result is that hepatic functions in patients receiving 75, or 150 mg /d still around normal ranges, but significant hepatic alterations have occurred in patients treated with 325 mg/d., as well as the incidence of hypoglycemia.

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INTRODUCTION:

The research study included elderly patients (60-75 y), patients were excluded if they had hepatic or renal failures, history of bleeding, or if they were receiving anticoagulants, aspirin, or nonsteroidal anti-inflammatory drugs. Patients are divided into 3 groups according to an antiaggregant dose of aspirin; each cluster includes 15 patients.

The first group was given 75 mg/day, The second group was given 150 mg/day, and The third group was given 325 mg/day.The investigation was for a period of 5 months.

CBC, hepatic tests (plasma proteins, triglycerides, SGPT, SGOT, ALP) and levels of sugar are assessed before administration of aspirin and every month. Patients are strongly asked to take aspirin regularly and to avoid missing its dose.

RESULTS & DISCUSSION:

The result of the investigation shows that the first and second groups did not show a significant alteration in their CBC as well as hepatic tests and blood sugar, before, during and after treatment with aspirin. The third group, who was treated by 325mg/d for 5 months, had a significant alteration in CBC: anemia and leukocytosis (may be due decreased immune response linked to aging), decreased in plasma protein serum especially albumin (2 g/d compared to 3.5-5.0 g/d), and a slight elevation of SGPT (1 in contrast to 5 to 40 units/L)m and SGOT (3 compared to 7-56 units/L). However, serum levels of ALP remain around its normal range (52 in contrast to 44 to 147 IU/L, indicating that extra or intrahepatic hepatic ducts have no obstruction, after excluding bone abnormalities. The unwanted effect may be linked to a high dose of aspirin as an antiaggregant and may be due to heart failure which is characterized by decreased hepatic blood flow.

Hypoglycemia was also noted in this group. Showing that aspirin (at 325mg/d) may have a negative effect on metabolic processes in the liver, namely decreased glycogenolysis as well as gluconeogenesis, these alterations appear only after 5 months of aspirin's therapy, along 3-4 months of treatment hepatic tests for all groups were around their ranges.

CONCLUSION:

Aspirin at doses of 75mg or 150mg/d causes no hepatocytes damage. Aspirin at doses of 75mg or 150 mg/d has no adverse effects on carbohydrate metabolism hence levels of sugar are still normal. Aspirin therapy is beneficial to reduce recurrence of IHD in all 3 groups for the first 4 months of treatment. Aspirin with a dose of 325 causes hepatocytes injury, (elevation of hepatic enzymes and decreased albumin serum) and hypoglycemia especially with treatment greater than 5 months. CBC and hepatic tests, as well as blood sugar, must be investigated every 4 months in elderly patients receiving aspirin therapy for prophylaxis of IHD.

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