

THE EFFECTS OF MINI-DOSE ASPIRIN ON HEPATIC FUNCTIONS.**Dr. Omar Rashid Sadeq* MD., Ph.D**

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ABSTRACT

Aspirin is the prototype of NSAIDs, that's 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, vomiting, abdominal pain, lethargy, tinnitus and dizziness to severe such as seizures 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 by 325 mg/d., as well as the incidence of hypoglycemia.

KEYWORDS: Aspirin, Antiaggregant, Ischemic heart disease. Salicylism, Cerebral edema.**METHODOLOGY**

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 antiinflammatory drugs. Patients are divided into 3 groups according to antiaggregant dose of aspirin, each group includes 15 patients.

First group was given 75 mg/day.

Second group was given 150 mg/day.

Third group was given 325 mg/day.

The investigation was in 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.

METHODS OF INVESTIGATION & DISCUSSION

The result of investigation show that the first and second groups didn't 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 month have a an important alteration in CBC, (anemia, 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 (51 in contrast to 5 to 40 units/L)m and SGOT (73 compared to 7-56 units/L), but serum of ALP remains 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 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

1. Aspirin at doses of 75mg or 150mg/d causes no hepatocytes damage.
2. Aspirin at doses of 75mg or 150 mg/d has no negative effects on carbohydrate metabolism hence levels of sugar are still normal.
3. Aspirin therapy is beneficial to reduce recurrence of IHD in all 3 groups for the first 4 month of treatment.
4. 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.

5. CBC and hepatic tests as well as blood sugar must be investigated every 4 month in elderly patients receiving aspirin therapy for prophylaxis of IHD.

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