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REPORT

Aspirin

The Multi-Purpose Compound Not Just for Headaches Anymore
by JoAnn Knorr

Aspirin is a synthetic compound known as acetylsalicylic acid. For years, the multi-purpose effectiveness of aspirin as an anti-coagulant, fever reducer and pain reliever has been known and used in hospitals and by physicians all over the world. Many studies have been done to show that low dose aspirin has positive effects on the prevention of a wide range of diseases, many of which may be linked to improper blood flow. Aspirin's ability to enhance blood flow is one reason why aspirin is the multi-purpose, wonder drug of today.

According to FDA Consumer, 80 Million aspirins are taken each day, most of which are taken to reduce the risk of heart disease, not as an everyday fever reducer or pain reliever. However, aspirin has not been approved by the FDA for prophylactic use of heart disease.

The FDA has issued statements in its "October Rule" confirming that aspirin has been shown to reduce the risk of further cardiovascular problems in a variety of patients: those who have suffered already evident attacks of stroke, transient ischemic attack (mini-stoke), heart attack and angina (chest pain); those who have undergone heart bypass surgery, balloon angioplasty or carotid endarterectomy and have thereby experienced recurrent blockages of arteries; those who have reduced their risk of death or complications when aspirin was taken at the first sign of a heart attack.

The FDA advises physicians to prescribe aspirin for patients with angina at rest, occlusive stroke (blockage of blood flow to the brain), women who have had transient ischemic attacks, for patient undergoing coronary bypass surgery, angioplasty and endarterectomy.

The consensus among many physicians is that by taking a low dose daily aspirin elderly Americans can lower the risk of heart attack, stroke, transient ischemic attacks, colon cancer and dementia. Dr. Harvey Simon, editor of Harvard Men's Health Watch states, "Virtually everybody with coronary disease should be taking aspirin daily. For people without heart disease, I think almost everybody with risk factors should take daily aspirin unless there is a reason not to."

How aspirin prevents heart attacks

The latest finding about heart attack risk involves an agent called "C-reactive protein" that causes a lethal inflammatory cascade on the inner arterial wall. What happens before many heart attacks is that C-reactive protein induces atherosclerotic plaque on the arterial wall to burst open like popcorn, blocking a coronary artery, and causing the heart attack. Aspirin specifically suppresses C-reactive protein. Many people take low-dose aspirin to inhibit abnormal blood clot formation inside of arteries. The newer studies show that aspirin may also protect against heart attack by suppressing C-reactive protein. A lot of people in alternative medicine criticize The Life Extension Foundation for recommending the daily use of low-dose aspirin, but The Foundation stands firm on the recommendation it made in 1983: most healthy people should take low-dose aspirin to specifically reduce their risk of heart attack. Aspirin may protect in ways that supplements do not.

Cancers

Heart disease claims more lives each year than any other disease, whereas, cancer has the second highest mortality rate. Studies have shown aspirin has proven benefits when it comes to a variety of cancers, including colon, gastrointestinal and esophageal cancer.

Colon cancer is responsible for about 12% of all cancer deaths. New research from the American Cancer Society shows that low dose aspirin usage reduces the risk of death from colon cancer as much as 40% to 50%. Studies can confirm that as little as one

regular aspirin tablet a week could reduce colon cancer by 50%, while daily aspirin cut risks by 63%. While we know that aspirin inhibits prostaglandin production, new evidence suggests aspirin may activate the production of Gamma-interferon and Interleukin-2, which seem to inhibit the growth of malignant cells, as well as boost the immune system.

The American Cancer Society epidemiologists found that while low dose aspirin use had no effect on fatal cancers of most organ systems, the risks were greatly reduced for fatal cancers of the esophagus, stomach, rectum and colon. These four digestive tract cancers were approximately 40% lower among men and women who used aspirin 16 times per month or more for at least one year compared to those who used no aspirin.

Studies indicate that occasional use of aspirin is associated with a 90% decrease risk of developing esophageal cancer, and no regular aspirin users developed the disease. Further studies to determine the protective effect of aspirin against both squamous cell esophageal carcinoma and adenocarcinoma of the esophagus are indicated.

As with heart disease, studies have shown that taking low doses of aspirin, and maintaining a diet low in fat and high in fiber-grains, fruits and vegetables-reduces the risk of many of the digestive cancers.

Gallstones

When cholesterol-saturated bile accumulates and becomes lodged in the cystic duct, gallstones are formed. During acute cholecystitis, usually a bacterial inflammation associated with gallstones, the production of prostaglandins are increased as part of the normal inflammation and repair processes. This process involves much pain, increased fluid secretions, muscle contraction and decreased bile, all of which perpetuate the inflammation more.

Several studies have been conducted to show that prostaglandin inhibitors such as aspirin and non-steroidal anti-inflammatory drugs can prevent the formation of gallstones, as well as reduce the biliary pain associated with this process.

Alzheimer's and related dementia

Dementia is a condition reserved for brain diseases, such as Alzheimer's. Dementia involves chronic or persistent disorder of the mental processes. It is marked by memory disorders, changes in personality, deterioration in personal care, impaired reasoning ability and disorientation.

Dementia-related Alzheimer's is associated with neurofibrillary tangles and beta amyloid plaques which researchers have found within the anatomical structure of the brain. These beta amyloid plaques that are found in the brain are very similar to the plaque of blood vessels. Similar, in that, the amyloid plaques inhibit the proper flow of nutrients to the brain and these plaques are formed in association with the inflammation and repair process.

Years ago researchers noticed a link between arthritis, leprosy and the incidence of Alzheimer's. As part of the standard treatment for arthritis and leprosy was the use of aspirin. These patients were proven to have a lower incidence of Alzheimer's. Researchers from Johns Hopkins Alzheimer's Disease Research Center found that as the use of aspirin and other non-steroidal anti-inflammatory drugs increases, the rate of mental deterioration decreases.

In the November 8, 1999 issue of Business Week, it was reported, "[Pharmaceutical companies] are investigating anti-inflammatory drugs to reduce the inflammation that accompanies plaque formation. Population studies have long noted that aspirin and other nonsteroidal anti-inflammatory drugs appear to reduce the risk of Alzheimer's by 50%." Science, in effect, is making great strides.

Diabetes mellitus and related conditions

There are several types of diabetes and two types of diabetes mellitus. Both types of diabetes mellitus exhibit a hyperglycemic state without medication. That is, both express high blood glucose levels. Aspirin's effect on blood glucose level produces hypoglycemia (low blood glucose). That does not mean that aspirin is safe to take for either type of diabetes mellitus.

The first type of diabetes mellitus relies on insulin to lower the blood glucose. These patients develop the disease at a young age. Diabetes mellitus, type II individuals usually develop the disease as obese adults, while relying on both diet and oral hypoglycemic drugs. Aspirin magnifies and enhances the effects of insulin and oral hypoglycemic agents. Therefore aspirin, used along with these agents, can be dangerous without a physician's consultation.

Some of the late complications of both types of diabetes mellitus are atherosclerosis (narrowing of coronary arteries and occlusion), and the events associated with atherosclerosis, such as heart attack, stroke, cataracts, glaucoma or blindness, renal insufficiency and gangrene of the lower extremities. When patients have reached late complication stages of diabetes mellitus,

they are usually prescribed some type of anti-coagulant or aspirin. (Note: Aspirin has not been approved for the prophylactic use of these late complications of diabetes mellitus. -Eds.)

The commonality of the late complications of diabetes mellitus involves plaque-laden blood vessels as a result of the increases in circulating fat and sugar (carbohydrates) converting to fat. Very few studies have been conducted on the effects of low doses of aspirin on diabetic patients. However, the cardiovascular studies that have been done contain an overlap of patients with cardiovascular problems and diabetes mellitus. Some small studies have shown aspirin to lower the risk of cataracts associated with diabetes mellitus.

Pre-eclampsia

Approximately 15% of women experience hypertension during pregnancy. This condition, pre-eclampsia or pregnancy induced hypertension (PIH), can lead to puffiness in the hand and face, fluid retention, electrolyte imbalance, kidney problems, epileptic like seizures, coma, low birth weight, and death for the fetus or mother. Many obstetricians are prescribing a low dose aspirin (60 to 150 mg per day) for some high risk pregnancies to lessen the complication and to improve the outcome for both the mother and child. These high risk women are generally started on low dose aspirin prophylactically in the second trimester.

Many small studies have concluded that "low dose aspirin reduces the risks of pregnancy induced hypertension and severe low birth weight, with no observed risk of maternal or neonatal adverse effects." There has been a 65% reduction in high blood pressure and a 44% reduction in episodes of severe low birth weight infants.

We know the effects of aspirin on the clotting factors of a person with hypertension, but how does this affect the birth weight of the baby? As the mother experiences hypertension the clotting factors circulating in her blood increase, leading to increased plaque and constriction of blood vessels. Again, this process possibly inhibits proper nourishment to the fetus.

Standard dose

One normal over the counter aspirin contains 325 milligrams of acetylsalicylic acid. Label instructions will say to take one or two every four hours not to exceed 24 tablets in a given 24 hour period. This remedy and dosage has been sold for years as a temporary relief to headache pain, muscle aches and pain, and as a fever reducer during cold and flu season, and for the minor aches and pains of arthritis. The smallest dosage of aspirin that can be sold is 81 milligram tablets, like baby aspirin, which children rarely are given due to the danger of Reyes' syndrome.

According to Ken McCoy, president of Smart Pharmaceuticals, in order to get an aspirin tablet less than 81 milligrams on the market, a lengthy drug trial would have to be conducted and approved by the FDA. This process could take 7 to 10 years. However, Smart Pharmaceuticals has been able to market a 100% pure, 81 milligram tablet for adults designed to be easily bisected into 40.5 milligrams.

Certainly not everyone should begin taking aspirin without first consulting their physician. Every individual takes responsibility of their own health with educated information and physician advice. However, sometimes physicians' hands are tied to the legalities of what has been regulated as an approved treatment. FDA approval for all of aspirins' possible prophylactic uses has not even germinated in the minds of scientists, much less funding for these studies to market such an inexpensive drug would seem non-profitable. It would seem more likely for studies to be funded for more expensive drugs.

Contraindications

As previously mentioned, aspirin magnifies the effects of insulin and oral hypoglycemic drugs. Aspirin also enhances the effects of anticoagulants such as Coumarin and Warfarin, thyroid hormones, like Thyroxine or Synthroid. Alcohol elimination time and toxicity may increase due to the effect aspirin has on alcohol's elimination enzyme. There are many drugs that are inactivated in combination with aspirin use, including medications for gout. Therefore, it is always recommended to consult physician advice when combining aspirin with an existing prescribed medication.

Certain individuals absolutely cannot tolerate aspirin. Samter's syndrome involves those individuals who, due to bronchial asthma, nasal polyps or biochemical response cannot take aspirin. Aspirin use is not recommended for children due to Reyes' syndrome, and for normal healthy pregnancies.

Summary

Aspirin is a wonder drug that has been around for more than a century and has a wide range of uses. The effects of low doses of aspirin are outstanding with the enhancement of blood flow to increase the nourishment of all cells of the body while also allowing the proper removal of waste products, which may lead to diseased states. Aspirin has the ability to turn off the overproduction of

the clotting factors prostaglandins and Thromboxane A2, while at the same time boosting the immune system by producing cancer fighting Gamma-interferon and Interleukin-2.

The use of aspirin has been shown to benefit those with heart disease and cancer, the two leading causes of death in the United States. There are many proven clinical studies to show the phenomenal results of various illness from its regular use. So far, there are several conditions known to improve from the use of aspirin and its effects on the blood. But those may be just the beginning, as there may be many unproven uses for aspirin yet to be discovered. For healthy people, the typical daily dose is 81 mg taken with a heavy meal.

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Back to the Magazine Forum

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