Researchers urge: 'Prescribe aspirin based on benefit-to-risk not age'

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Recent guidelines have restricted aspirin use in the primary prevention of cardiovascular disease to patients under 70, and more recent guidance to patients under 60. Yet, the risks of heart attacks and strokes increase markedly with age.

There has been considerable confusion from recently reported results of

four large-scale randomized trials of aspirin in high-risk primary prevention subjects, two of which showed significant benefits of aspirin, but the other two, based possibly on poor adherence and follow-up, did not. As a result, health care providers are understandably confused about whether or not to prescribe aspirin for primary prevention of heart attacks or strokes, and if so, to whom.

Researchers from Florida Atlantic University's Schmidt College of Medicine and collaborators provide guidance to primary care providers and their patients in their perspective, "Primary Care Providers Should Prescribe Aspirin to Prevent Cardiovascular Disease Based on Benefit to Risk not Age," published online ahead of print in the journal *Family Medicine and Community Health, British Medical Journal*.

The authors urge that to do the most good for the most patients in primary prevention of heart attacks and strokes, health care providers should make individual clinical judgements about prescribing aspirin on a case-by-case basis and based on benefit-to-risk not age. They conducted an updated meta-analysis, which adds the results of the four recent trials to the previous comprehensive meta-analysis of six earlier major trials, and aspirin produced a statistically significant 13 percent reduction in cardiovascular disease with similar benefits at older ages in each of the individual trials.

"Any judgments about prescribing long-term aspirin therapy for apparently healthy individuals should be based on individual clinical judgments between the health care provider and each of his or her patients that weighs the absolute benefit on clotting against the absolute risk of bleeding," said Sarah K. Wood, M.D., senior author and interim dean, FAU Schmidt College of Medicine. "For long-term use of aspirin or any over-the-counter drug, patients should consult their primary care provider."

FAU collaborated with leading clinical researchers from the University of Wisconsin School of Medicine and Public Health and the Harvard Medical School, Brigham and Women's Hospital. The authors say that primary care providers have the most insight and knowledge to make appropriate recommendations in collaboration with their patients.

"Primary care providers also should be aware that all patients suffering from an acute heart attack should receive 325 milligrams of regular aspirin promptly, and daily thereafter, to reduce their death rate as well as subsequent risks of heart attacks and strokes," said Charles H. Hennekens, M.D., Dr.P.H., co-author and the first Sir Richard Doll Professor and senior academic advisor, FAU Schmidt College of Medicine. "In addition, among long-term survivors of prior heart attacks or occlusive strokes, aspirin should be prescribed long-term unless there is a specific contraindication. In primary prevention, however, the balance of absolute benefits, which are lower than in secondary prevention patients, and risks of aspirin, which are the same as in secondary prevention, should be an individual clinical judgment."

The authors emphasize that the increasing burden of cardiovascular disease in developed and developing countries underscores the need for more widespread therapeutic lifestyle changes as well as the adjunctive use of drug therapies of proven net benefit and affordable costs in the primary prevention of heart attacks and strokes. The therapeutic lifestyle changes should include avoidance or cessation of smoking, weight loss and increased daily physical activity, and the drugs should include statins for lipid modification, and multiple classes of drugs likely to be necessary to achieve control of high blood pressure.

"While patient preference is always important to decision making, when the absolute benefits and risks are similar, patient preferences assume increasing importance," said Lisa C. Martinez, M.D., co-author and an assistant professor, FAU Schmidt College of Medicine. "This may

include consideration of whether the prevention of a first heart attack or stroke is a more important consideration to a patient than their risk of a significant gastrointestinal bleed."

The authors note that individual clinical judgements by health care providers about prescribing aspirin in primary prevention may affect a relatively large proportion of their primary prevention patients. For example, metabolic syndrome, a constellation of overweight and obesity, hypertension, high cholesterol, and insulin resistance, a precursor to diabetes mellitus, affects about 40 percent of Americans age 40 and older. Their high risks of a first heart attack and stroke may approach those of patients with a prior event.

"General guidelines for aspirin in primary prevention do not seem to be justified," said Hennekens. "As is generally the case, the primary care provider has the most complete information about the benefits and risks for each of his or her patients."

According to the United States Centers for Disease Control and Prevention, more than 859,000 Americans die of heart attacks or stroke every year, which account for more than 1 in 3 of all U.S. deaths. These common and serious diseases take a very large economic toll, costing $213.8 billion each year to the health care system and $137.4 billion in lost productivity from premature death alone.

More information: Kyungmann Kim et al, Primary care providers should prescribe aspirin to prevent cardiovascular disease based on benefit–risk ratio, not age, *Family Medicine and Community Health* (2021). DOI: 10.1136/fmch-2021-001475

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