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ASSESSMENT OF ASPIRIN IN CARDIOVASCULAR DISEASE TREATMENT

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ABSTRACT:

Aspirin continues to provide a therapeutic role in reducing the incidence of advanced cardiovascular events in patients who have been diagnosed. Additionally, there are still unreliable clinical applications for primary prevention, particularly among diabetic cohorts, female demographics, and elderly individuals. a critical evaluation of risk assessments. Critical insights into the risk-benefit profile of aspirin have been provided by recent investigations, which have focused on hemorrhage correlations related to potential advantages across specific patient subdivisions.

Key Points :

Aspirin is beneficial in small doses and has a low risk of gastrointestinal bleeding. It reduces the risk of coronary heart attacks and strokes. Prescription depends on the patient's age and risk of myocardial infarction or stroke. Aspirin is widely used for treating cardiovascular disease and has been shown to have a mortality advantage in patients with familiar cardiovascular conditions.

Aspirin, first synthesized by Dr. Felix Hoffman in 1897, has been widely studied for its healing properties in cardiovascular diseases. It is commonly used in secondary prevention, particularly for preventing secondary thrombosis and gestational changes like preeclampsia. Numerous clinical trials have evaluated its effectiveness in high-risk patients.

Aspirin is a medication that prevents blood clotting and has been proven effective in preventing cardiovascular disease (CVD) number one prevention. Studies have shown that aspirin can reduce the risk of CVD. The role of aspirin in primary prevention of vascular disease has been investigated in six mixed trials and numerous analyses, with an average follow-up duration of 6.4 years.

Studies on aspirin for secondary prevention have shown its significant efficacy, with the second global study revealing the benefits of early management of 162.5 mg of aspirin after acute MI. However, the disparity in efficacy between primary and secondary prevention trials raises questions about which patient groups have the best efficacy in aspirin therapy and the factors contributing to treatment failure.

Aspirin is recommended for its antiplatelet effects during the extreme phase of an infection, followed by a low dose for 7 weeks or longer. It is not recommended for children with coronary aneurysms, and occasional aspirin doses are usually recommended. Recent research has raised concerns about using aspirin as a primary prevention for mild cardiovascular risk, with four large-scale trials published, three of which were published in 2018. However, the use of aspirin as a primary prevention is now generally not recommended, and individual counselling is required for selection.

Aspirin use for primary prevention relies heavily on individual-specific bleeding risk calculations. However, there is a lack of validation equipment to estimate bleeding risks. A prediction tool for higher gastrointestinal headaches exists, but it doesn't consider universal bleeding risks and isn't effective for primary prevention. Further research is needed to evaluate bleeding risks and find an affordable solution to keep affected person-specific records.

Secondary Prevention ;

Secondary prevention involves using aspirin to manage cardiovascular and cerebrovascular events in patients who have experienced such events or have a high risk of such events, reducing the annual risk of serious vascular events.

Adverse Effect ;

Aspirin, a medication used to prevent thrombotic events, can cause adverse side effects, particularly in the gastrointestinal tract. This is due to the inhibition of COX-1 and prostaglandin E2 synthesis by aspirin, which increases mucous production in the gastric mucosa. The risk of major extracranial and intracranial hemorrhage related to antiplatelet drugs is difficult to evaluate in person trials due to their occurrence being less. In the evaluation of the ATT combination, the total proportional increase in the chance of major extracranial hemorrhage with aspirin treatment was about one-1/2. After

accounting for noncompliance within trials, aspirin may be compatible with other cases found in case control studies. The general absolute excess of intracranial hemorrhage due to aspirin treatment was patients consistent with 12 months in high-risk trials.

Aspirin resistance :

Aspirin resistance is a condition where aspirin fails to prevent thrombotic complications, prolong bleeding time, and reduce TXA2 production. It affects 5-60% of the population affected by cardiovascular and cerebrovascular diseases, but it's difficult to determine the exact occurrence due to variables in research.

Conclusion ;

Aspirin is a crucial antiplatelet medication for cardiovascular patients, reducing mortality and cardiovascular events in acute treatment for acute coronary syndrome and Kwashiorkor disease thrombotic stroke. It also has proven benefits in secondary prevention for various conditions including acute coronary syndrome, revascularization stroke, stable angina, TIA, and atrial fibrillation.

REFERENCES :

1. The study by Yusuf, Reddy, and Anand explores the global prevalence of cardiovascular diseases, highlighting the epidemiologic transition, danger factors, and impact of urbanization. The study also highlights the role of TIS10, a phorbol ester promoter mRNA from Swiss 3T3 cells, in a novel prostaglandin synthase/cyclooxygenase homologue. Additionally, Husain, Andrews, and Andrews found that aspirin improves endothelial disorder in atherosclerosis

2. Godwin et al. studied aspirin's role in primary and secondary prevention of vascular disorders. Williams conducted a survey on aspirin use among adults in the U.S., while Mainus et al. focused on its use in primary and secondary cardiovascular disease prevention in the U.S.

3. The study explores the history and mechanism of action of aspirin, a medication used to prevent and treat various diseases. It is based on research conducted by various researchers, including D. A. Kujubu, B. S. Fletcher, B. C. Varnum, R. W. Lim, and H. R. Herschman.

4. The study also discusses the role of aspirin in the pathogenesis of coronary artery disease and acute coronary syndromes. The mechanism of action of aspirin has been studied in various studies, including a randomized trial of intravenous streptokinase, oral aspirin, both, or neither among 17,187 cases of suspected acute myocardial infarction.

5. The study also found that aspirin protects low density lipoprotein from oxidative modification. The study also found that aspirin has protective effects against acute myocardial infarction and death in mean with unstable angina. The study highlights the importance of aspirin in maintaining a healthy cardiovascular system and preventing the development of cardiovascular diseases.

6. The study focuses on the use of aspirin, sulfinpyrazone, or both in managing unstable angina. The results of a Canadian multi centre trial were published in the New England Journal of Medicine in 1985.

7. The American College of Cardiology/American Heart Association Task Force on Practice Guidelines for the Management of Patients with Unstable Angina/Non-ST-Elevation Myocardial Infarction in 2007 was developed in collaboration with the American College of Emergency Physicians, the Society for Cardiovascular Angiography and Interventions, and the Society of Thoracic Surgeons.

8. The guidelines were also revised in 2004 for patients with ST-elevation myocardial infarction. A collaborative meta-analysis of randomised trials of antiplatelet therapy for the prevention of death, myocardial infarction, and stroke in high-risk patients was conducted in 2002. The study also examined the use of aspirin and dipyridamole in preventing restenosis after percutaneous transluminal coronary angioplasty. The study concluded that aspirin and dipyridamole are effective in preventing restenosis after coronary artery surgery.

9. The American Heart Association's Committee on Rheumatic Fever, Endocarditis, and Kawasaki Disease has issued a statement for health professionals on diagnosing, treating, and long-term management of Kawasaki disease.

10. The ACCP Conference on Antithrombotic and Thrombolytic Therapy also discussed antithrombotic therapy in children. The International Stroke Trial (IST) and the CAST trials have also investigated the use of aspirin and heparin in acute ischaemic stroke.

11. The Antithrombotic Trialists' (ATT) Collaboration has conducted a collaborative meta-analysis of individual participant data from randomized trials on aspirin in the primary and secondary prevention of vascular disease.

12. The study highlights the importance of aspirin in preventing vascular disease and its potential benefits in preventing other cardiovascular diseases.

13. The use of aspirin in the primary prevention of myocardial infarction has been extensively studied and documented in various medical journals. A double-blind trial was conducted in 1992 to evaluate the effectiveness of aspirin in preventing myocardial infarction in patients with stable chronic angina pectoris.

14. The American College of Cardiology/American Heart Association Task Force on Practice Guidelines for the management of patients with chronic stable angina was also consulted in 2003.

15. A Veterans Administration cooperative study showed improvements in early saphenous vein graft patency after coronary artery bypass surgery with antiplatelet therapy.

16. The effects of aspirin responsiveness and platelet reactivity on early vein graft thrombosis after coronary artery bypass graft surgery were also studied.

17. The combination of statins and aspirin therapy has been shown to enhance the long-term outcome of percutaneous coronary intervention

18. . The impact of aspirin treatment on long-term outcomes after percutaneous coronary intervention has also been studied.

19. The use of aspirin in postoperative procedures has been shown to improve vein graft patency and reduce the frequency and type of acute complications. Studies have shown that immediate postoperative aspirin can improve vein graft patency after coronary artery bypass graft surgery.

20. Additionally, aspirin and other antiplatelet agents have been used during operative coronary revascularization. Low-dose aspirin has been found to have a positive effect on restenosis after coronary angioplasty

21. Pretreatment with aspirin versus aspirin plus dipyridamole has also been found to reduce the frequency and type of acute complications of percutaneous transluminal coronary angioplasty. Aspirin and dipyridamole have been shown to be effective in preventing acute coronary thrombosis.

22. The American College of Cardiology/American Heart Association Task Force on Practice Guidelines updated the 2001 Guidelines for Percutaneous Coronary Intervention in 2005.

23. The guidelines cover various topics, including stroke risk and antithrombotic strategies in atrial fibrillation. The Seventh ACCP Conference on Antithrombotic and Thrombolytic Therapy also discussed antithrombotic therapy in atrial fibrillation.

24. The European atrial fibrillation trial was also discussed. The British Medical Journal published a randomized trial of prophylactic daily aspirin in British male doctors.

25. The Thrombosis prevention trial involved low-intensity oral anticoagulation with warfarin and low-dose aspirin in the primary prevention of ischaemic heart disease in men at increased risk.

26. The Hypertension Optimal Treatment (HOT) trial was also discussed. The guidelines aim to improve the management of atrial fibrillation and improve overall cardiovascular health .