

Diet in Stroke: Beyond Antiplatelets and Statins

According to global burden of diseases 2017, stroke is the third most common cause of mortality in India and one of the leading causes for long-term morbidity. Most of the secondary prevention strategies in ischemic stroke are directed to pharmacotherapy with antiplatelets, statins, and control of cardiovascular risk factors. However, diet and lifestyle changes are often not projected, even though the risk reduction by these measures can be up to 60%.^[1] Most of the clinicians are ignorant about the importance of these practices in disease management.

Stroke forms part of the larger spectrum of atherosclerotic cardiovascular disease (ASCVD). The landmark trial which studied risk factors of ASCVD is the Framingham Heart Study. This trial, which has identified the “conventional” risk factors for stroke (and other cardiovascular diseases), has also thrown light on certain dietary habits for primary prevention of ASCVD.^[2] To analyze the results of nutritional studies better, one must understand that diet can be viewed in two aspects. A dietetic history can be elicited based on the amount of carbohydrate, fats, proteins, vitamins, minerals, and dietary fiber one consumes; or as food types, such as rice and tubers, fish, red meat, fruits, and vegetables. Most of the studies and guidelines mix up these components and often create confusion.

Internationally accepted dietary guidelines are available for stroke prevention. American Heart Association/American Stroke Association recommends a diet high in fruits, vegetables, and whole grain, with fish, poultry, vegetable oils, nuts, legumes, and low-fat dairy products; and to restrict intake of red meat, sweets, and carbonated beverages.^[3] Guidelines of the European Society of Cardiology for a healthy diet make similar recommendations. They advise to limit saturated fats to <10% of total energy intake, with limited intake of trans-fatty acids; dietary fiber of 30–45 g/day; 200 g of fruits and vegetables each per day; two servings of oily fish per week; and to limit salt intake to <5 g/day.^[4]

There are specialized diets, which incorporate these components. A widely accepted and evidence-based diet is the Mediterranean diet.^[5] It has high intake of olive oil, vegetables, fruits, cereals, and nuts; moderate intake of poultry, fish, and wine; and a low intake of sweets, red and processed meats, and dairy products. In a trial which tested the efficacy of Mediterranean diet with extra-virgin olive oil, this diet lowered the risk of cardiovascular events by 1.7%–2.1%.^[6]

Another factor to consider while prescribing a diet for stroke patients is their comorbidities such as

hypertension and diabetes. The dietary approaches to stop hypertension (DASH) diet advocates high intake of fruits, vegetables, and low-fat dairy products and lowers the systolic blood pressure (BP) by 5.5 mmHg and diastolic BP by 3 mmHg.^[7] Diabetic patients should be encouraged to have food with low-glycemic index.

Low-carbohydrate high-fat (LCHF) diet requires special mention. In the largest prospective trial of LCHF diet - the Prospective Urban Rural Epidemiology (PURE) trial, higher intake of fat and animal protein was associated with lower mortality, whereas higher carbohydrate intake increased mortality, contrary to popular beliefs.^[8] In a parallel study of the PURE trial, the authors found that higher intake of fruits, raw vegetables, and legumes was associated with lower mortality, implying that refined carbohydrates are the likely culprit.^[9] The authors also found an inverse association between saturated fat and risk of stroke, contrary to international dietary guidelines.^[10]

Nutritional supplements such as vitamin C, vitamin E and beta-carotene among many others, are common practice but have unproven benefits and should not be routinely prescribed. Alcohol has a varied effect on the risk of stroke. Moderate drinking (up to two glasses per day) is protective for ischemic stroke, whereas binge drinking (more than six and four drinks per sitting for men and women, respectively) and heavy usage are harmful.^[11] In practice, moderate drinkers need not be asked to sober up, heavy drinkers need to be counseled to cut down, and non-drinkers should never be encouraged to drink for secondary prevention because, one can never predict that they will stick to moderate drinking.

Indian scenario is different. Cultural, regional, and religious diversity exists in dietary practices and is difficult to generalize across the country. Hence, making a dietary guideline for the whole country is a herculean task.^[12] In the journal, Durga and Manorenj found that stroke patients from Hyderabad district had lower intake of green leafy vegetables, roots, tubers, fruits, prawns, crab and water, and higher intake of red meat, organ meat, fried snacks, and fruit juices.^[13] Such studies are a starting point to make local and national dietary guidelines.

To conclude, similar studies in other regions need to be conducted to better understand the local dietary habits and risk factors. Larger multicentric trials across the country should be organised, evidence from which

can be incorporated into national guidelines for a more tailored dietary guidelines for our population, rather than relying on international recommendations. A good lifestyle and dietary counseling should be a part of routine stroke care, and it is the duty of the clinician to initiate this effort. A holistic approach to disease prevention with pharmacotherapy and good lifestyle practices would have a better result than either alone. Ultimately, we are what we eat.

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