Editorial

Ischemic Stroke Prevention

Antonino Tuttolomondo, MD, PhD

Dipartimento Biomedico di Medicina Interna e Specialistica, Università degli Studi di Palermo

Ischemic Stroke Prevention Stroke is the second leading cause of death worldwide as well as the leading cause of long-term disability, with around 500 transient ischemic attacks (TIAs) and 2,400 new strokes per 1,000,000 inhabitants each year [1]. One third of new stroke patients (700) die each year and less than half recover and regain their independence [2]. Stroke prevention is a crucial issue, given that stroke is a frequent and severe disorder, and acute stroke therapies, which are effective at the individual level, have only a limited impact on public health. Vascular risk factors should be treated to prevent ischemic stroke, especially high blood pressure, high blood cholesterol and cigarette smoking. Stroke is a life-changing event that affects not only the person who may be disabled, but the entire family and other caregivers as well. Utility analyses show that a major stroke is viewed by more than half of those at risk as being worse than death [3]. Despite the advent of treatment of selected patients with acute ischemic stroke with intravenous tissue-type plasminogen activator and the promise of other acute therapies, effective prevention remains the best treatment for reducing the burden of stroke [4, 5]. Primary prevention is particularly important because >70% of strokes are first events [2]. Nevertheless, observational studies have documented relationships between initial stroke, vascular risk factors (e.g., hypertension, diabetes, hyperlipidemia), and lifestyle risk factors (e.g., smoking, alcohol use, obesity, lack of physical activity) [6-8]. Determining the cause of stroke does influence choices for management and determination of stroke subtype could influence prevention management. On this basis statins, antiplatelets have a clear indication in prevention of atherosclerotic subtypes of stroke, whereas the effectiveness of these drugs in prevention of lacunar subtype of stroke appear to be less indicated. Cardioembolic stroke prevention include anti-vitamin-k antagonists and antiplatelets but the possible effectiveness of statins and antihypertensive drugs should be better addressed.

Although the relationship between cholesterol plasma levels and stroke remains still controversial, several studies have demonstred a favourable effect of this class of drugs on lowering stroke risk. Furthermore meta-analysis of trials with statins at intensive dosage showed that its therapeutic way in a secondary prevention setting is able to reduce by 17% the risk of stroke [9]. In particular the Stroke Prevention by Aggressive Reduction in Cholesterol Levels (SPARCL) trial, atorvastatin 80 m/day in comparison with placebo significantly reduced stroke risk in patients with a recent history of acute cerebrovascular event [10, 11]. The role of the rennin-angiotensin-aldosteron-system (RAAS) in process that lead to heart disease, stroke and kidney failure took a great leap forward when it became possible to antagonize this system. In the LIFE study [12] Losartan was better than atenolol in reducing the primary composite end point of cardiovascular mortality, stroke, and MI (unadjusted HR 0.85; 95% CI, 0.76-0.96; P=.009). This difference was primarily due to a 26% relative risk reduction (RRR) in stroke with losartan (unadjusted 0006). There have been numerous clinical trials looking at the use of ACE inhibitors and ARBs in HTN, HF, and other special populations. Overall, it has been noted that ACE inhibitors and ARBs appear to have an additional benefit beyond just the blood pressure-lowering effect when used in certain populations. Medical management of patients with atrial fibrillation (AF) at high risk for stroke is limited by problems of imperfect tools for assessment of thromboembolism and bleeding risks. Improved instruments, such as the CHA_2DS_2VASc and HAS-BLED risk stratification scores, have been incorporated into European practice guidelines. Until recently, the most effective therapy for stroke prevention has been anticoagulation with a vitamin K antagonist, but new oral anticoagulants in development, antiarrhythmic drugs that reduce adverse cardiovascular events in patients with AF, and interventional techniques for occlusion of the left atrial appendage represent promising options for stroke prevention. On this basis, determining the cause of stroke does influence choices for management. Nevertheless, most trials did not evaluated stroke according stroke subtypes and on this basis few studies exist about the role of drug prevention in lacunar stroke or cardioembolic stroke, and only more recent studies considered stroke prevention in relation of clinical subtypes of stroke classified according TOAST subtype. Another important feature of classifying stroke subtypes is also represented by immunoinflammatory degree of each diagnostic subtype that several studies [13-17] demonstred could be strictly related to stroke diagnosis, stroke size and prognosis, so representing an additional factor to evaluate in a clinical context of prevention strategies of ischemic stroke.

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Antonino Tuttolomondo, MD, PhD
Dipartimento Biomedico di Medicina Interna e Specialistica,
Università degli Studi di Palermo (Italy),
P.zza delle Cliniche n.2, 90127 Palermo (Italy);
Tel: +39/0916552128;
Fax: +39/091/6552285;
E-mail: bruno.tuttolomondo@unipa.it