

Stroke: an emphasis on guidelines

2014 was notable for several advances in stroke, and particularly for the development of prevention guidelines. Prior guidance in stroke prevention, although comprehensive for stroke, was more narrowly focused and less well integrated with the overall theme of cardiovascular health.¹⁻³ The definition of stroke has undergone a transformation in recent years,⁴ and the importance of control of cardiovascular risk factors to reduce stroke mortality and the value of inclusion of stroke in cardiovascular risk prediction instruments are increasingly recognised as part of the outcome cluster (ie, stroke is now regarded as a key outcome).⁴⁻⁶ Thus, stroke is now more closely joined to other cardiovascular diseases, such as coronary artery disease and its sequelae, myocardial infarction, and heart failure. Here, we describe several key stroke guidelines from 2014 that have substantial practical implications, beginning with major new cardiovascular disease prevention guides that serve as important precedents to understand the new stroke guidance statements.

The 2014 evidenced-based guidelines for the management of high blood pressure in adults (Eighth Joint National Committee or JNC 8)⁷ and the American College of Cardiology/American Heart Association (ACC/AHA) statement on the treatment of blood cholesterol⁸ provoked controversy. The JNC 8 guidance altered the blood pressure treatment goal to less than 150/90 mm Hg for people aged 60 years

or older, a departure from the traditional goal of less than 140/90 mm Hg.⁷ The new increased goal raised concern of heightened risk of stroke and could lead to confusion because other guidelines adhere to a target of less than 140/90 mm Hg.⁹ In the guidelines for lipid management, four main sets of criteria indicate that people are eligible for statin therapy: clinical atherosclerotic cardiovascular disease; LDL cholesterol 190 mg/dL or more; age from 40 to 75 years, LDL cholesterol 70–189 mg/dL, and a history of diabetes mellitus; and a 10-year atherosclerotic cardiovascular disease risk of 7.5% or more.⁷ The new ACC/AHA guidelines are valuable because they emphasise a risk-based approach; a new risk calculator to establish which patients qualify for statin therapy, overall, simplifies the approach to lipid management in the community, and includes both heart disease and stroke prediction. The risk calculator has been criticised, however, because it might overestimate risk and lead to unnecessary statin treatment.⁹

The AHA recurrent stroke prevention guidance statement recommends a blood pressure goal of less than 140/90 mm Hg; however, for patients with recent lacunar stroke, a systolic blood pressure target of less than 130 mm Hg would be reasonable.¹⁰ Statin therapy with intensive lipid-lowering effects is recommended for patients with atherosclerotic ischaemic stroke or transient ischaemic attack and LDL cholesterol of 100 mg/dL or more. Additionally, new recommendations include the Mediterranean-type diet, consideration of a sleep assessment, administration of new oral anticoagulants in patients with atrial fibrillation, and potential use of dual antiplatelet therapy with aspirin and clopidogrel within 24 h of a minor ischaemic stroke or transient ischaemic attack, for 90 days.¹⁰

An AHA women's stroke prevention guideline emphasises differences in frequency and risk factors for stroke between women and men—including pregnancy, oral contraceptives, menopause and postmenopausal hormone therapy, and migraine—and general strategies for stroke prevention.¹¹ Pre-eclampsia or hypertension during pregnancy is emphasised as a harbinger of future chronic hypertension, as is screening for cardiovascular risk

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factors, especially hypertension and cigarette smoking in women who have migraine with aura, who use oral contraceptives, or who are postmenopausal. Conjugated equine oestrogen with or without medroxyprogesterone is not recommended for primary or secondary stroke prevention, nor are selective oestrogen receptor modulators for first stroke prevention.¹¹

The European Stroke Organisation established guidelines for the management of spontaneous intracerebral haemorrhage (ICH).¹² The guidance statement addresses 20 questions related to management of ICH, and provides treatment recommendations according to an evidence-based review. Patient management in an acute stroke unit, avoidance of graduated compression stockings and haemostatic therapy not associated with antithrombotic therapy, use of intermittent pneumatic compression in immobile patients, and administration of blood pressure-lowering therapy for recurrent stroke prevention were supported by moderate-to-high quality evidence. Although safe, the recommendation was only weak for intensive blood pressure lowering (systolic blood pressure <140 mm Hg) compared with a systolic blood pressure goal of less than 180 mm Hg within 6 h of ICH onset.¹² Early surgery for ICH and avoidance of corticosteroids also fell into the weak recommendation category.

Finally, highlights of AHA guidelines on prevention of first stroke emphasise use of the aforementioned ACC/AHA risk calculator, blood pressure treatment to a goal of less than 140/90 mm Hg (including in people with diabetes), treatment of adults with diabetes with a statin, and use of the CHA₂DS₂-VASc score for risk stratification of patients with non-valvular atrial fibrillation.¹³ If the CHA₂DS₂-VASc score is 2 or more and risk of haemorrhagic complication is low, administration of warfarin, dabigatran, apixaban, or rivaroxaban is indicated.¹³ Furthermore, transfusion therapy is recommended for children with sickle cell disease at increased risk of stroke, and continued transfusion is probably indicated in those whose transcranial doppler velocities revert to normal.

In conclusion, in 2014, we witnessed a plethora of new and interrelated guidelines for cardiovascular disease, first and recurrent stroke prevention, stroke prevention in women, and management of

spontaneous ICH. Use of a new risk calculator or similar instruments to establish administration of statin therapy and a blood pressure target goal for stroke prevention of less than 140/90 mm Hg are recommended.

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