pressure by 12/5 mm Hg and stroke risk by 43% (95% CI, 30 to 54). Single-drug therapy reduced blood pressure by 5/3 mm Hg and produced no discernible reduction in the risk of stroke.

Davis and Donnan [*N Engl J Med* 2012] noted that investigations (including brain imaging and arterial cardiac assessment) are warranted promptly after a TIA or stroke to determine cause and guide interventions to reduce subsequent risk. Physicians should routinely pay attention to lifestyle factors and prescribe blood pressure–lowering, statin, and antiplatelet drugs as indicated. Effective secondary-prevention strategies for selected patients include carotid revascularization for high-grade carotid stenosis and anticoagulation therapy for atrial fibrillation.

2012 European Guidelines on CVD Prevention in Clinical Practice

Written by Rita Buckley

Joep Perk, MD, Linnéuniversitetet, Kalmar, Sweden, presented a short summary with the main recommendations of the 2012 European Guidelines on cardiovascular disease (CVD) prevention in clinical practice. The Fifth Joint Task Force of the European Society of Cardiology and other societies on CVD prevention included representatives of 9 societies and invited experts [Perk J et al. *Atherosclerosis* 2012; *Eur Heart J* 2012].

According to Prof. Perk, the 2012 version is practical, shorter, and more adapted to clinical needs. It addresses 5 questions: 1) What is CVD prevention? 2) Why is it needed? 3) Who needs it? 4) How is it applied? and 5) Where should it be offered?

CVD prevention is needed because atherosclerotic CVD remains the leading cause of premature death worldwide. CVD affects both men and women. Of all deaths that occur before the age of 75 years in Europe, 42% are due to CVD in women and 38% in men. Prevention works. Over 50% of the reductions seen in CHD mortality relate to changes in risk factors and 40% to improved treatments [J Perk et al. *Eur Heart J* 2012].

One way this year's guidelines differ from earlier years is how recommendations are graded (strong or weak). Prior recommendations were based on graded evidence, giving randomized, controlled trials the greatest weight while undervaluing population studies, said Prof. Perk.

Risk age is a new way to drive home the importance of prevention to patients. For example, a 40-year-old male smoker with the same risk factors as a 60-year-old man with ideal risk factor levels has a risk age of 60 years.

Total risk estimation using multiple risk factors (eg, the Systematic Coronary Risk Evaluation Project [SCORE]) is recommended for all asymptomatic adults. Those at high risk can be identified by the presence of established CVD, type 1 or type 2 diabetes with end-organ damage, moderate to severe renal disease, or very high levels of individual risk factors (eg, a high SCORE risk; Table 1).

Table 1. Who Needs CVD Prevention?

Recommendations Regarding Risk Estimation	Class	Level	Grade
Total risk estimation using multiple risk factors (such as SCORE) is recommended for asymptomatic adults without evidence of CVD	I	C	Strong
High-risk individuals can be detected on the basis of established CVD, diabetes type 2 or type 1 with end-organ damage, moderate to severe renal disease, very high levels of individual risk factors, or a high SCORE risk	I	C	Strong

CVD=cardiovascular disease; SCORE=Systematic Coronary Risk Evaluation Project.

Major recommendations cover smoking, nutrition, physical activity, blood pressure, diabetes mellitus (Table 2), dyslipidemia (risk defined by low-density lipoprotein cholesterol level) with and without severe chronic kidney disease, patient adherence, and where and when CVD prevention programs should be offered.

Table 2. Recommendations on Diabetes Mellitus 2012.

Recommendations on Diabetes Mellitus	Class	Level	Grade
The target HbA1C for the prevention of CVD in diabetes of <7.0% (<53 mmol/mol) is recommended	I	A	Strong
Statins are recommended to reduce cardiovascular risk in diabetes	I	A	Strong
BP targets in diabetes are recommended to be <140/80 mm Hg	I	A	Strong

BP=blood pressure; CVD=cardiovascular disease.

Four key messages were emphaized:

- Risk-factor screening, including lipid profile, should be performed in adult men ≥40 years of age and women ≥50 years or postmenopausal.
- The physician in general practice is the key person to initiate, coordinate, and provide long-term follow-up for CVD prevention.
- The practicing cardiologist should be the advisor in cases where there is uncertainty over the use of preventive medication or when usual preventive options are difficult to apply.
- Patients with cardiac disease may participate in self-help programs to increase or maintain awareness of the need for risk factor management.

Prof. Perk also pointed out that nongovernmental organizations are important to healthcare workers in promoting preventive cardiology and the European Heart Health Charter marks the start of a new era of political engagement in preventive cardiology.

The High Cost of Untreated CHD

Written by Rita Buckley

Globally, pulmonary vascular disease associated with congenital heart disease (CHD) may be the most preventable cause of pulmonary artery hypertension and related mortality and morbidity [Adatia I et al. *Chest* 2010]. Mohammed Omar Galal, MD, PhD, MBA, Prince Salman Heart Center, Riyadh, Saudi Arabia, presented an overview of advanced and combination therapies in patients with pulmonary arterial hypertension (PAH)-CHD.

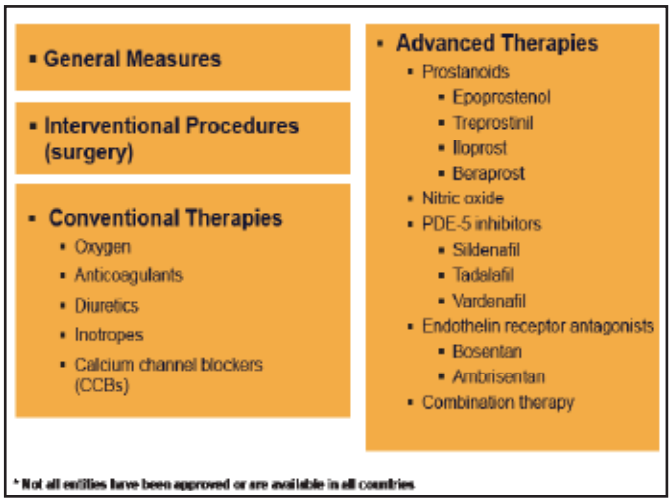
Although progress in the diagnosis and treatment of CHD has reduced the number of PAH-CHD cases in Western nations, few PAH patients in developing countries have access to treatment. Adatia et al. [*Chest* 2010] estimate that 3 million children worldwide are at risk for the development of pulmonary vascular disease due to CHD; most have a reparable heart defect, such as an isolated atrial septum, ventricular septal defect, or patent ductus arteriosus.

PAH-CHD is classified into 4 types suitable for advanced therapy. These include 1) Eisenmenger Syndrome, 2) moderate to large shunt lesions with PAH, 3) small defects with PAH, and 4) PAH after repair of CHD [Galie N et al. *Eur Heart J* 2009; Simonneau G et al. *J Am Coll Cardiol* 2009]. Eisenmenger Syndrome is the most advanced form of pulmonary vascular disease secondary to CHD [Adatia I et al. *Chest* 2010].

Treatment options in PAH range from general measures to advanced therapies (Figure 1). Conventional treatments include diuretics, anticoagulants, oxygen therapy, digoxin, and calcium channel blockers. In a randomized trial with 2 years of follow-up, Sandoval et al. [*Am J Respir Crit Care Med* 2001] found that nocturnal oxygen therapy did not modify the natural history of patients with advanced Eisenmenger Syndrome. Calcium channel blockers benefit around 10% of patients with PAH and seem to improve survival, said Prof. Galal.

According to Prof. Galal, advanced therapy should be used if there is a negative vasoreactivity test or lack of clinical improvement with calcium channel blockers. It can also be used in all groups with a NYHA functional class of II, III, or IV. However, most data on advanced care are based on studies with idiopathic PAH and PAH due to scleroderma, and the therapies are very expensive.

Figure 1. Treatment Options in PAH*.



PAH=pulmonary arterial hypertension; PDE-5=phosphodiesterase 5.

The 3 classes of advanced therapy include endothelin-1 receptor antagonists, phosphodiesterase 5 inhibitors, and prostanoids. Bosenten has been demonstrated to improve exercise capacity and stroke volume in patients without Down syndrome [Rubin LJ et al. *N Engl J Med* 2002]. In a medium-term follow-up study of adult patients with PAH associated with CHD, Duffels et al. [*Congenit Heart Dis* 2007] found that advanced treatment seemed to stabilize disease and decrease the rate of deterioration, especially in younger patients.

Based on these and other data, Prof. Galal concluded that PAH-CHD remains a serious disease leading to reduced quality of life and longevity, 4 classes of PAH-CHD justify advanced therapies, that short-term studies have confirmed the efficacy and safety of advanced/combination therapies, and long-term studies are still needed.

Greater Consistency and Protection with Newer Antiplatelet Agents

Written by Rita Buckley

Newer antiplatelet agents offer greater consistency and protection than the current standard of care. Eyas Al-Mousa, MD, Jordan University Hospital, Amman, Jordan, discussed the latest antiplatelet therapy for percutaneous coronary intervention (PCI).

Antiplatelet therapy is the cornerstone of treatment for patients who have acute coronary syndromes (ACS) and/or are undergoing PCI [Angiolillo DJ et al. *J Am Coll Cardiol* 2007].