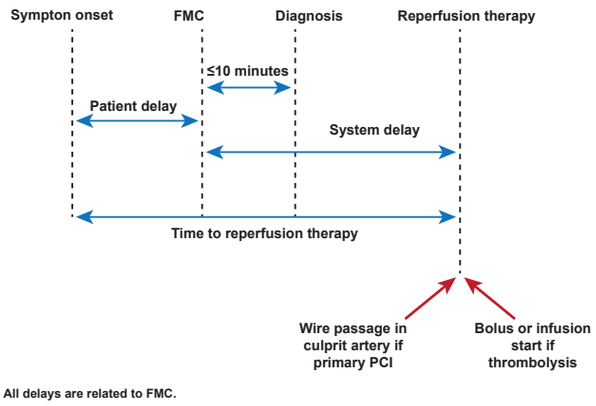
networks with 10 hospitals with cardiac catheterization labs were identified to provide 24/7 primary PCI service under this government program.

An additional eight primary PCI centers will be opened by 2015 [Kristensen SD et al. *EuroIntervention* 2012]. The Romanian national program has resulted in an increase of patients treated with primary PCI, decreases in the utilization of thrombolysis, and a decrease in the number patients with STEMI who do not undergo reperfusion therapy. The number of primary PCIs performed increased from 40 per million inhabitants in 2009, to 64 in 2010, and to 210 in 2011.

The Stent for Life program identified factors that contribute to the delay in treating STEMI patients and targets for providing intervention (Figure 1). The first factor found to delay the timing of therapy was the length of time between the onset of a patient's symptoms to the first medical contact. Public service campaigns designed to increase awareness of symptoms of myocardial infarction have been developed to reduce this potential for delay in therapy. Efforts of the Stent for Life program have focused on reducing the delays in reperfusion that can occur after patients present to the healthcare system.

Figure 1. Components That Contribute to Delayed Treatment for STEMI and Ideal Time Intervals for Intervention



FMC=first medical contact; PCI=percutaneous coronary intervention.

Adapted from Steg G et al. *Eur Heart J* 2012.

Addressing Tobacco Use to Reduce Cardiovascular Disease

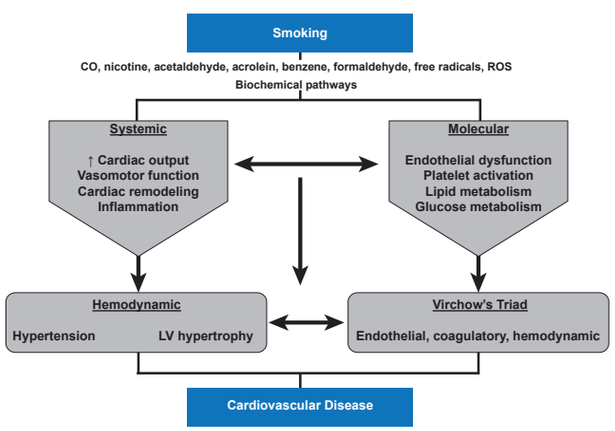
Written by Mary Mosley

The scope of the impact of tobacco on cardiovascular disease (CVD) and its mode of action, the lack of awareness of physicians about smoking cessation tactics, and smoking cessation as a treatment for CVD were reviewed by Georges A. Saade, MD, Bellevue Medical Center, Beirut, Lebanon.

Tobacco use is a risk factor for 6 of the 8 leading causes of death worldwide and is associated with nearly 6 million deaths per year (Figure 1). The use of tobacco is associated with increased CV risk and the use of tobacco is projected to be associated with 175 million deaths worldwide by the year 2030. Given the adverse effects of tobacco utilization, at its 2012 summit on Noncommunicable Diseases, the United Nations endorsed efforts to reduce tobacco abuse in an attempt to reduce premature mortality from CVD.

Cigarette smokers die ~10 years earlier than nonsmokers and at least half of chronic smokers will die of a tobacco-related disease, according to the British Male Doctors' Study [Doll R et al. *BMJ* 2004]. Smokers of waterpipes, practiced in Egypt and other countries, are also at risk for developing dependence and other adverse health-related conditions associated with smoking [Maziak W. *Addict Behav* 2011], contrary to popular opinion that waterpipes are safe. Newer interventions to help smokers quite offer the potential for reducing the smoking rates in the near future. An anonymous survey of 326 cardiologists in Spain revealed that 3 in 4 always ask their patients about smoking and recommend that they quit; 1 in 5 had cessation print materials in their office; and 2 in 5 checked patient progress. However, 73% were unfamiliar with cessation medications and 71% wanted to improve their tobacco treatment skills. [Dalmau R. Heart wire http://www.theheart.org/article/1531389.do].

Figure 1. Pathways Linking Tobacco and CVD



CO=carbon monoxide; CVD=cardiovascular disease; LV=left ventricular; ROS=reactive oxygen species.

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IMPACT OF SECONDHAND SMOKE

Secondhand smoke causes ~603,000 premature deaths annually, and 87% of secondhand smoking-related deaths are from ischemic heart disease [Oberg M et al. *Lancet* 2011]. A comprehensive literature review concluded that the CV effects of secondhand smoke are substantial and rapid, and that the effects of even brief exposure (minutes to hours) are often nearly as large (averaging 80% to 90%) as those of chronic active smoking [Barnoya J, Glantz SA. *Circulation* 2005]. Furthermore, they showed that long-term exposure to secondhand smoke at work or home is associated with a 30% increased risk for coronary heart disease (CHD) in adult nonsmokers.

SMOKING CESSATION AS A TREATMENT OF CVD

Smoking cessation is a powerful treatment for established CVD, reducing the risk of CV-related death by 36% and the risk of future cardiac event rates by 50%. These effects are comparable to the 15% to 35% reductions in CV-related death achieved with many widely used pharmacologic therapies (aspirin, β-blockers, ACE inhibitors, statins). Prof. Saade noted that tobacco cessation is one of the most important preventative measures available and that and no other preventive activity produces such significant results from such a small investment in time. The number needed to treat to prevent CV events or death is shown in Table 1.

Table 1. Treating Tobacco Is Effective and Efficient for Reducing Cardiovascular Events and Death

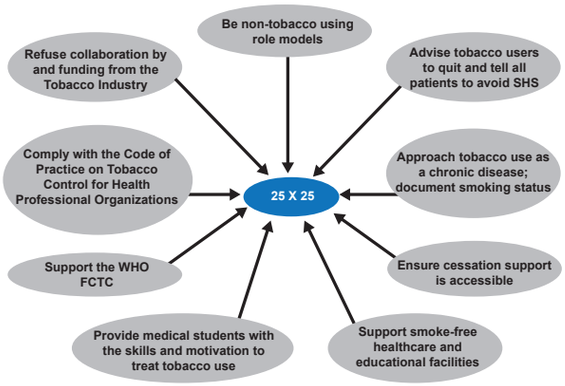
Intervention	Outcome	NNT
Statins	Prevent 1 death over 5 years	107
Aspirin	Prevent 1 MI over 5 years	118
Antihypertensive therapy	Prevent 1 stroke, MI, death over 1 year	700
Cervical cancer screening	Prevent 1 death over 10 years	1140
MD 5 min advice to stop smoking	Prevent 1 premature death	80
+ cessation medication	Prevent 1 premature death	38-56
+ behavioral support	Prevent 1 premature death	16-40

MD=doctor; MI=myocardial infarction; NNT=number needed to treat.

Tobacco treatment is also cost-effective, with cessation counseling and medications costing $2587 per life-year saved [Cromwell J et al. *Health Care Financ Rev* 1997].

Prof. Saade noted that the cardiology team has a professional obligation to address tobacco use and exposure, and it is an essential component of CVD treatment for all patients. Cardiologists have an important role to play, as outlined in Figure 2, in achieving the "25 by 25" CVD goals established by the World Heart Federation.

Figure 2. Role of the Cardiologist to Achieve "25 by 25" CVD Goals



FCTC=Framework Convention on Tobacco Controls; SHS=secondhand smoke; WHO=World Healh Organization.

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Ideal Bioabsorbable Stent Scaffold Is an Achievable Dream

Written by Lynne Lederman

The development of metalic stents improved outcomes after angioplasty by reducing acute vessel occlusion. However, permanent metal-based stents have the potential for negative sequelae after several months in place that couls be overcome if the stents were absorbable. Mohammad I. Kurdi, MBBS, Al Takhassoussi Hospital, Riyadh, Saudi Arabia, reviewed the advantages of having stents "disappear" and discussed profress toward development of the idea bioabsorbable stent.

Reabsorbable stents could reduce or eliminate stent-associated thrombosis, obstructions caused by stent strut side-branches, and restenosis subsequent to strut fracture. Resorption could also allow reestablishment of vascular function. After stent absorbtion, the stented site could be more easily imaged using computed tomography or magnetic resonance and re-treated if necessary, either surgically or via percutaneous coronary intervention (PCI) prodcedures, although the expectation is that repeat interventions would be avoided. Furthermore, bioabsorbable stents could be used to treat pediatric patients, allowing the treated vessels to grow without requiring surgical removal of the stents.

The concept of bioabsorbable stents has been around for over 2 decades, but there are challenge to development. Ideal bioabsorbable stents must be strong enough to function for an appropriate time, have struts that are not too thick, be capable of delivering anti-proliferative drugs to control restenosis, and not cause unacceptable inflammation during breakdown. The long-term use of antiplatelet therapy that is