

independent mechanisms. However, the observed independent effect of early menopause and multiple miscarriages is too small to contribute to discrimination of women in whom CVD will and will not develop.

The strengths of our study include the size, the large number of endpoints, availability of a large number of female-specific factors, information on pregnancy complications, and the fact that it was population based. Furthermore, coefficients for the traditional risk factors were optimally fitted to our data instead of using published coefficients to avoid the risk of erroneously attributing a poor fit of traditional risk scores in these data to the added value of female-specific factors.

Several limitations of this study should be addressed. The presence of female-specific factors was assessed using self-administered questionnaires, which could have led to misclassification. No information about the presence of polycystic ovary syndrome, intrauterine growth restriction, or birth weight was collected.

Although female-specific factors are associated with CVD risk, they have no added value in addition to traditional predictors for the prediction of 10-year risk of CVD in women.

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Arterial Coronary Bypass Grafting



Targeting the Interventricular Septum

We read with great interest the article by Gaudino et al. (1) on the choice of conduits in coronary artery surgery. They propose an algorithm for graft selection for the second target vessel considering technical, anatomic, and conduit patency characteristics. They focus on the lateral wall, as the second target vessel, and they consider the radial artery and the right internal thoracic artery as similar alternatives. The inferior wall is considered as the third target and revascularization with a great saphenous vein is advocated, unless distal branches of the right coronary artery are critically stenosed (>90%); in such cases, in situ gastroepiploic or radial artery is preferred.

Based on physiological data, the inferior wall should be regarded as a functionally important myocardial territory because it consists of parts of the right and left ventricles and a significant portion of the interventricular septum (2). The interventricular septum plays a key role in the functioning of both ventricles through ventricular interdependence. Moreover, inferior infarcts are associated with a high rate of complications and a dismal prognosis as compared with lateral infarcts. Thus, we raise the concept that the dominant posterior descending artery, which supplies the inferior wall, should be equally considered as the second target vessel and receive an arterial graft. By implementing this strategy, the anterior and posterior aspects of the septum are revascularized with the best conduits in terms of long-term patency, namely the left internal thoracic artery and the right internal thoracic artery, respectively. Grafting the posterior descending artery overcomes concerns regarding reduced patency of arterial grafts to a dominant right coronary artery (3), which is attributed mainly to competitive flow and to progression of disease to the crux. Furthermore, this pattern has been associated with excellent long-term patency rates in large series and is advocated in terms of a potential prognostic benefit (3,4).

In principle, the quest for an optimal surgical revascularization strategy should not focus exclusively on the severity of target vessel stenosis, but should also take into account the dominance of coronary circulation.

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Association Between Migraine Headache and Cardiac Syndrome X



In the October 2015 issue of the *Journal*, Pepine et al. (1) presented the current concepts on non-obstructive coronary artery disease as an origin of ischemic heart disease and associated adverse outcomes among women. The authors emphasized the need for further evaluation to clarify the emerging paradigm of nonobstructive coronary artery disease especially in women to define proper short-term and long-term treatment. To expand this point further, we would like to add our novel project to increase the level of knowledge about the dilemma of cardiac syndrome X (CSX) (2,3), which is currently deficient.

In our study, we assessed the prevalence of migraine headache, according to the International Classification of Headache Disorders, in 3 groups: a CSX group (n = 50), a coronary artery disease group (n = 50), and a healthy group (n = 50) using a well-designed prospective study. The prevalence of migraine was 60% in CSX patients, 16% in the coronary artery disease group and 22% in the healthy group (p < 0.0001). The frequency of migraine headache in women with CSX was 70.4% and in men was 52.2%. Our study concluded that CSX may presumably be a manifestation of migraine as another migraine equivalent.

The connection between CSX and migraine headache has not yet been fully addressed. One of the suggested mechanisms in relation to migraine and angina pectoris is vasospasm, as has been seen previously in the coronary and cerebral arteries of patients with migraine headache (4,5). This occurrence can be clarified using functional brain imaging during the symptomatic phase of CSX to reveal cerebral perfusion changes similar to the migraine complex. Endothelial disturbance and different reactions to mediators, such as endothelin, is another probable theory that connects CSX and migraine headache (3). The third presumable mechanism causing chest pain in migraine patients is mitochondrial dysfunction. It may occur in the myocardial tissue of patients with migraine headache, which may eventually present with a clinical manifestation similar to CSX (2,5). However, there are many debates about the connection of CSX and migraine, and future studies are needed.

After the ongoing evidence on the multifaceted pathophysiology of CSX, it became even more clear that there is a need for a pragmatic approach to education and training of medical practitioners in the management of patients, especially in refractory patients using the current treatment.

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