Should patients with stenosis of the left main coronary artery waiting for bypass grafting be given priority?

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Insufficient capacity for coronary artery bypass grafting surgery (CABG) results in waiting time before surgery, in patients being assigned to different waiting times and in risk of death among the patients who are waiting. Angina symptoms, cardiac function and extent of coronary artery disease have traditionally been used to allocate patients to groups with different waiting times.[1] The impact of stenosis of the left main coronary artery on mortality and morbidity among patients waiting to undergo CABG is not clear, but in 2 large retrospective cohort studies the condition was not associated with increased waiting-time mortality.[2,3] However, because patients with this condition are generally given a high clinical priority, it is unclear whether the lack of impact of waiting time found in previous studies is caused by a true low risk or is the result of adequate prioritization.

In a study published in this issue[4] (see page 371), Légaré and associates investigate pre- and postoperative mortality and morbidity in a group of patients with stenosis of the left main coronary artery who were scheduled to undergo CABG. The main objective was to evaluate the safety of waiting for surgery in a selected group of 561 consecutive patients assigned to 1 of 4 different waiting queues. Waiting times, upgrade to a more urgent queue and waiting longer than the time established for each queue were recorded. Postoperative outcomes were in-hospital death from any cause and a composite outcome measure that included in-hospital death from any cause, mechanical ventilation for longer than 24 hours and a hospital stay of more than 9 days. Of the 561 patients, 4 (0.7%) died while waiting for surgery, 52 (9.3%) were upgraded to a more urgent queue and 147 (26.2%) waited longer than the standard times for their respective queue. The overall in-hospital mortality was 5.5% and did not differ significantly between the different queues. The composite outcome occurred in 32.6% of the patients. Independent risk factors for the composite outcome included age greater than 70 years, preoperative renal failure, left ventricular ejection fraction of less than 40%, myocardial infarction in the 7 days before surgery and stenosis of left main artery greater than 70%, but did not include queue assignment. The authors conclude that waiting for surgery with stenosis of the left main artery is safe and not associated with increased pre- or postoperative mortality or morbidity.

Légaré and colleagues should be recognized for their effort to shed light on this difficult issue. The investigation includes a large, consecutive and well-defined patient population, and the follow-up is accomplished thoroughly and with only a small amount of missing data. In this field, we have to rely on results from well-performed descriptive studies, since it is impossible to perform prospective randomized trials.

However, 2 issues are worth discussing. The first is whether patients with stenosis of the left main coronary artery have an increased risk of death in any category of waiting list. The authors state that the preoperative mortality of 0.7% among this group is low. This statement would be considerably stronger if the mortality was compared with that of a matched control group of patients without the condition or if mortality was related to waiting time. By relating the number of deaths to the time at risk, in this case the total patient time spent in the queue, a case-fatality rate can be calculated. The mean waiting time is not specified in the manuscript, but if we assume that it was equivalent to the median waiting time given in Table 2, the case-fatality rate would be 4 deaths per 18 patient years on the waiting list or 23 deaths per 100 patient years. This rate is markedly higher than that previously reported from waiting list registers (4–8 deaths per 100 patient years)[3,5–7] and does not support the statement that waiting-time mortality is low for patients with stenosis of the left main coronary artery. The low event rate, however, makes comparisons difficult, and even larger patient populations are required to demonstrate differences in case-fatality rates.

The second issue is whether postoperative morbidity and mortality are influenced by stenosis of the left main coronary artery. In most previous studies, no association has been found.[8,9] Neither has an association been found when waiting time is expressed as a continuous variable or when patients are operated on within the intended waiting time.[10,11] The findings of the current study thus support those of previous investigations.

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Even if the results of this study suggest prolonged waiting time does not worsen postoperative outcomes in patients with stenosis of the left main coronary artery, it remains essential to keep the waiting time short to reduce the risk while waiting and thus the total risk for patients accepted for CABG.

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A new childhood pathway for transmission of an increased likelihood of smoking?

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Cigarette use has long been known to be a prominent cause of illness and death, although only this year has a randomized controlled trial demonstrating this been published.[1] Nonetheless, the many cohort studies coming to this same conclusion led to many interventions to alleviate the harm from cigarettes. The earliest of these were concerned primarily with adult smoking cessation. They often produced significant outcomes in terms of disease prevention, but were limited by success rates (i.e., quit rates) below 30% and by the number of smokers ready to enter the programs at any given time. Meanwhile, interventions at the policy level included control of the price of cigarettes, restrictions on smoking in public spaces, public education about the dangers of smoking cigarettes and others. In combination, these interventions have had considerable effect on the rate of smoking among adults.

About a decade ago, because locational tobacco smoke was identified as a major contributor to various childhood diseases such as lower respiratory infections and asthma, attention turned to interventions to minimize children's exposure to secondhand smoke. Most environmental exposure is a result of parents' smoking in the home and family car. Parental smoking is not only a major source of secondhand smoke but also a primary pathway to smoking initiation by adolescents: Evidence suggests that until the age of about 12 years (after which peers predominate), the predominant role models for children are their parents.[2]

Twin studies have shown that about 75% of the variance in smoking initiation is heritable,[3] whereas a cross-cultural review attributed 46% in women and 57% in men.[4] Parental smoking is clearly a key determinant of children's smoking, although the mechanisms of transmission are not yet entirely described. Moreover, there is little evidence that smoking-prevention interventions aimed at adolescents are efficacious.[5] Clearly, the transmission of a

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