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The importance of unbiased diagnostic and therapeutic decisions in the management of angina patients

In 1991, Steingart et al¹ suggested the existence of sex-based biases in clinical practice, and since then, many studies have addressed the issue of gender bias in cardiology, particularly in relation to access to diagnostic techniques and outcome after cardiac catheterization and intervention.²⁻⁶ Whilst several studies have suggested that women have less access to care or poorer outcomes compared with men,^{2,4,6} others have failed to find such a difference.^{3,5,7,8}

Reasons for the different findings in different studies

The controversial findings are likely to have several explanations, including quality of data collection, different patient populations, and differences in follow up. The APPROACH (Alberta Provincial Project for Outcome Assessment in Coronary Heart Disease) registry in Canada, provides reliable data in patients undergoing cardiac catheterization and has been instrumental in providing useful information regarding gender differences regarding access to myocardial revascularization. In 2004, King et al⁹ assessed—in patients entered in the APPROACH database—whether the extent of coronary artery disease, treatment strategy, and time of patient follow-up affected the risk of death in women compared with men. Over 37 000 patients undergoing cardiac catheterization were included in the study. The main finding in the study was that women had higher 1-year mortality than men (5.6% vs 4.6%; $P < 0.001$). Of interest, stratified analyses showed that gender differences in risk occurred only soon after catheterization and were most obvious in patients undergoing revascularization treatment (PCI and CABG). Risk was found to decrease over time and the gender differences practically disappeared at 1 year of follow-up. Thus, in the view of the authors, gender differences in death rates after cardiac catheterization are time- and treatment-specific.⁹

The situation in the United Kingdom

The National Health Service (NHS) in the United Kingdom, like other national health services worldwide, aims at providing all citizens with equal access to health care. It is worrying, however, that studies indicate that older individuals,¹⁰ women,^{2,4,6} patients belonging to ethnic minorities,¹¹ and subjects who are socioeconomically deprived¹² have less access to effective therapeutic interventions for ischemic heart disease. Very recently, Sekhri et al¹³ assessed whether coronary angiography for suspected stable angina pectoris is underused in older patients, women, south Asian patients, and those living in socioeconomically deprived areas. In addition they investigated if when discrepancies occurred, these were associated with higher coronary event rates. The Sekhri study was a multicenter cohort trial where 1375 consecutive patients from six ambulatory care clinics in England were followed for 5 years. The main results of this study were: (i) angiography was less

likely to be performed in patients aged >64 years compared with those aged <50 years, in women vs men, in south Asians compared with white subjects, and in more deprived patients; and (ii) not undergoing angiography, when a true indication existed, was associated with a higher incidence of serious coronary events. The Sekhri study shows worrying data regarding angiography in women. Almost 80% of women deemed appropriate for coronary angiography did not receive it (in men this proportion was 57%). On multivariable analysis the hazard ratio of undergoing angiography in women compared with men was 0.42 (CI: 0.35 to 0.5). Of importance, women who were not offered angiography in the Sekhri study had a hazard ratio of 2.75 (CI: 1.52 to 5) of having a coronary event in the following 5 years.

These findings are of importance, as despite a clinical presentation suggestive of angina, coronary angiography is underused in the elderly, women, ethnic minorities, and people with low income. The consequence of not investigating patients with the appropriate strategy is an increased incidence of coronary events.

Despite the possible limitations of this relatively small study,¹³ their findings deserve to be taken into account and further studies in larger cohorts of real life patients should be carried out to further assess this important issue.

Undoubtedly, diagnostic angiography was underused across the whole patient group, with less than a third of patients receiving it despite an appropriate indication based on clinical presentation. This finding is in agreement with data in a recent report of the Euro Heart study involving cardiology outpatient clinic services in over 30 countries.¹⁴

Clinicians need therefore to be aware of the important clinical implications of applying evidence-based guidelines in all patients irrespective of age, gender, socioeconomic status, and ethnic origin. Unbiased decisions regarding diagnostic tests and therapeutic interventions are of paramount importance to prevent serious coronary events.

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