

## Gender Differences in Asymptomatic Patients Undergoing Coronary Revascularization in Spain: Gender Bias or Difference in Pain Threshold?.

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### Abstract

**Background:** Women's access to care is a subject of debate in the medical literature. In the case of revascularization for coronary artery disease (CAD), it has been suggested that women may not always receive equitable treatment. As part of a wider study designed to determine the appropriateness of percutaneous transluminal coronary angioplasty (PTCA) and coronary artery bypass graft surgery (CABG) in Spain, we discovered that the proportion of asymptomatic women undergoing coronary revascularization was significantly lower than that of asymptomatic men.

**Purpose:** To study the association between the presence of coronary artery disease (CAD) symptoms and various variables.

**Methods:** A retrospective study was made of the appropriateness of coronary revascularization procedures performed in Spain during 1997. A random sample of 3500 records of patients who had undergone revascularization (1800 PTCA and 1700 CABG) was chosen after stratification by hospital type (public or private) and number of interventions (for PTCA: 50-249; 250-399, ?400; for CABG: 50-99, 100-199, ?200). Hospitals which had performed fewer than 50 procedures, patients with previous CABG, and patients receiving other surgical procedures at the time of the intervention were excluded. To maintain the sample size, clinical records which met exclusion criteria or could not be located were replaced using random selection criteria. Asymptomatic patients were defined as those without chest pain during the 3 months before the intervention. Logistic regression techniques were used to study the association between CAD symptoms and sex, adjusted by age, vessel disease (left main, 3 vessel, 2 vessel with proximal left anterior descending (PLAD) involvement, 2 vessel other than PLAD, PLAD alone, 1 vessel other the PLAD); left ventricular ejection fraction (LVEF) (>50%, 31-50%, 20-30%), previous valve disease (yes/no) and diabetes (yes/no).

**Results:** The final sample consisted of 3466 interventions (1779 PTCA and 1687 CABG), of which 81.3% were carried out in men. The men in the sample were significantly younger (mean age 61.6 years) than the women (mean age 67.5 years). In the logistic regression it was found that women had a greater probability of being symptomatic than men (OR 2.7; 95%CI 1.8-4.1) (Chi-square: 37.4; df: 11; p<0.0001). No significant associations were found with the other variables studied.

**Conclusions:** It is surprising to find that revascularized women have a higher prevalence of CAD symptoms after adjusting for possible confounding variables (age, vessel disease, LVEF, diabetes, and previous valve disease). The patients classified as asymptomatic at the time of revascularization were persons on the waiting list who were being managed medically or apparently healthy patients who have been diagnosed with CAD during a routine checkup. This situation gives rise to the following questions: Do women have a lower threshold for CAD symptoms than men? Is there gender bias in managing patients on waiting lists? Are men more likely than women to receive physical examinations that can detect coronary disease before it produces symptoms?

Further research is needed to shed light on the source of this apparent inequity in the access to coronary revascularization.