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ORIGINAL ARTICLE

Association between subjective descriptors of coronary pain and disease characteristics: A pilot study in a Hellenic rural population

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Myocardial infarction;
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Summary
Purpose: We explored whether the way Hellenic patients describe their cardiac chest pain (verbal descriptions of the nature, intensity, temporal quality, location and radiation) associates with the diagnosis [acute myocardial infarction (AMI) versus unstable angina (UA)] as well as with the location of the coronary lesions.
Methods: A cross-sectional correlational design was employed to study 80 consecutive coronary care patients (44 with AMI, 36 with UA) from northwestern Hellas.
Results: Pain intensity did not differ significantly between AMI and UA, in contrast to treatment-seeking behaviour and accompanying symptoms ($p \leq 0.03$). Of AMI patients, women used more often the word ''pain'' ($p = 0.011$), and indicated pain at the left shoulder ($p = 0.004$). AMI patients used fewer words ($p = 0.03$), and experienced pain at the back of the neck ($p = 0.03$) and of the left arm ($p = 0.02$) less often. The descriptions ''knob'', ''constriction'' and ''drill'' were more prevalent in UA patients ($p < 0.01$). The description ''drill'' discriminated between diagnostic groups in a multivariate model ($p = 0.03$). Associations between the infarct and pain location ($p \leq 0.03$), and the use of some sensory descriptors ($p \leq 0.02$) were detected. Pain locations associated with ECG findings ($p \leq 0.005$).
Conclusions: Subjective acute coronary pain descriptions and pain characteristics may associate with the pathophysiological processes in coronary syndromes.

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Introduction

Chest pain is one of the most common presenting symptoms in the emergency room comprising 5—20% of emergency department visits (Bjork et al., 2006; Hirakawa et al., 2006), yet only 10—15% of individuals with chest pain suffer acute myocardial infarction (AMI) (Herlitz and Svensson, 2006). As much as 4—5% of patients with AMI may be missed during the initial examination (Jesse and Kontos, 1997). Triage decisions are based on previous history, symptoms and clinical signs, electrocardiographic (ECG) findings and confirmatory laboratory data, which, however, may be sources of significant error (Trevelyan et al., 2003). Atypical descriptions of chest pain may jeopardize timely diagnosis and prompt treatment, as well as patients' well-being and survival (Herlitz et al., 2002; Wilhelmsen et al., 1998). Nurses' perceptions and factors such as presenting symptoms, nursing knowledge and gender-specific behaviours may influence triage decisions (Arslanian-Engoren, 2000). Even when appropriately referred, a percentage of patients may be misdiagnosed since ECG alterations and ST-elevation may be either atypical or absent (Pollack et al., 2006), and a complete set of serial cardiac markers may not be taken (Trevelyan et al., 2003), or enzyme measurements may be misleading (Mair et al., 1995).

Gender (Albarran et al., 2002; McSweeney et al., 2001), age (Gupta et al., 2002) as well as differences in profession, social background and race (Klingler et al., 2002), along with semantic distinctions in verbal meanings due to either cultural and/or regional factors (Summers et al., 1999) may contribute to the diversity in the description of chest pain. It is intriguing to investigate whether there are country-specific or even region-specific patterns of chest pain reports which could be viewed as additional indicators of AMI and contribute to the assessment process.

We conducted a preliminary cross-sectional correlational study to explore whether the way Hellenic patients describe their cardiac chest pain (i.e. verbal descriptions of the nature, quality, intensity, temporal quality, location and radiation of pain, perception of alleviating and aggravating factors, perception regarding the most distressing symptoms/experiences) associates with the actual diagnosis [acute myocardial infarction versus unstable angina (UA)] as well as with the location of the myocardial lesions and ECG findings. Further, we examined potential associations between the description, location and radiation of chest pain and gender. Finally, we explored multivariate models for the discrimination between AMI and UA.

The association of various characteristics of coronary pain with the type of coronary pathophysiology has been explored in several studies, which provided not very compelling but fairly consistent evidence that the explicit features of chest discomfort may entail important information regarding specific coronary lesions. Compared to non-AMI patients, patients with AMI tend to differ in the intensity of pain (Gaston-Johansson et al., 1991), in the words they choose to describe their pain (Hofgren et al., 1994), in the radiation of pain (Albarran et al., 2002), whereas, they may experience more accompanying symptoms (DeVon and Zerwic, 2004). Additionally, women with AMI may characterize their symptoms with stronger emotive words (Albarran et al., 2000; Hofgren et al., 1994), and to differ in pain radiation (Albarran et al., 2000, 2002). Factors which should be evaluated when interpreting the results of coronary pain association studies include: (a) the inclusion of individuals with non-cardiac chest pain, (b) the extent and location of infarcts, (c) the percentage of individuals presenting with non-Q myocardial infarction (MI), (d) the history of previous MI, (d) the relative frequencies of demographic characteristics including age, gender, educational level and race and (e) co-morbidities that may interfere with the perception of pain and release of nociceptive molecules (diabetes, blood pressure, medications, stress level and previous episodes of pain). Coronary pain is a complex multifactorial phenomenon, of yet unclear pathophysiology (Coskun et al., 2006), therefore multiple factors should be taken into account, simultaneously, in order to form predictive/diagnostic models.

Methods

Research design

A descriptive, cross-sectional and correlational design was employed.

Sample and setting

The study was approved by the institutional ethics committee, and the medical and the nursing manager of the unit. Informed consent was acquired from all participants prior to data collection, and confidentiality and anonymity were assured. The study protocol involved patients admitted to the five-bedded coronary care unit (CCU) of the University Hospital of Ioannina, Epirus, at northwestern Greece, due to a first episode of acute chest