Assessment of risk tolerance for adverse events in emergency department chest pain patients: a pilot study.

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**Abstract**

**BACKGROUND:** Emergency physicians commonly encounter low-probability/high-morbidity decisions, and chest pain is a prime example. Negative outcomes are improbable but feared, resulting in substantially more patients admitted for chest pain than have important disease. The literature gives little guidance on patient preferences for decision-making when the negative outcomes are unlikely but potentially severe.

**OBJECTIVES:** The objective of this pilot study was to assess the tolerance of Emergency Department (ED) patients with chest pain for adverse events occurring within 2 weeks of the episode.

**METHOD:** We recruited a convenience sample of patients with a chief complaint of chest pain from the ED of an urban tertiary-care referral center. Each subject was interviewed to determine demographic information, perceived health status, insurance status, and tolerance for adverse events related to chest pain. Adverse events were defined loosely but were suggested to be heart attack, the need for emergency cardiac surgery, or death. The risk tolerance question was framed by describing a specific numeric risk and determining at what risk the patient switched from desiring hospital admission to desiring discharge; we termed this the decision threshold.
RESULTS: Sixty-eight (68) subjects were included. Fifty-four percent of subjects were male, 60% were African-American, and 35% were white; 40% of the subjects classified themselves as being of average health. Of the 31 subjects who had prior heart trouble, 48% (n = 15) stated they had a prior heart attack and 19% (n = 6) an irregular heartbeat. The median decision threshold, or the acceptable personal risk of an adverse event for a person to forego admission to hospital, was 6.5% (interquartile range 0.5-22.9%). The mode was 0.5%, and 44% (30/68) of subjects had a decision threshold of 2% or less. There was no obvious pattern for most of these explanatory variables, though there was a suggestion that race may affect patients' risk tolerance.

CONCLUSIONS: There is substantial variation in patients' reported tolerance for adverse events from ED chest pain. Further investigation of this phenomenon may lead to better decision-making.

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