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Editorial

Chest Pain Clinic

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"It is the middle of the night or maybe the beginning of a busy workday when you suddenly feel pain in your chest. You may try to ignore it at first, but the pain has you scared and worried. Could you be having a heart attack? Should you go to the emergency room?"

Chest pain is one of the most common reasons people call for emergency medical help. Fortunately, chest pain does not always signal a heart attack. Often it is unrelated to any heart problem. But, even if the chest pain you experience has nothing to do with your cardiovascular system, the problem may still be important — and worth the time spent in an emergency room to have it evaluated.

Emergency medical admissions are important. They continue to rise year after year; consume substantial health care budget; and generate bed crises.

In the United States, for example, approximately five million people annually undergo evaluation in the emergency department for acute chest pain, at a cost of more than $ 6 billion. Most of these patients are admitted to the hospital with an average length of stay of 1.9 days. Patients with acute central chest pain account for 20-30% of emergency medical admissions[1,2]. Most are admitted because of concern about unstable coronary heart disease. Yet fewer than half will have a final diagnosis of acute myocardial infarction or unstable angina. Patients without high-risk coronary heart disease thus account for over half of those presenting with chest pain and over 10% of all emergency medical admissions. Such patients could be safely managed without admission, and most would prefer it. The current system is therefore both ineffective and inefficient. Any scheme, which safely avoids these unnecessary admissions might save resources, reduce stress for patients, and crucially reduce the worrying false negatives.

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Those missed cases of high-risk coronary heart disease.
The key issue is thus the sensitivity of the risk stratification techniques and hence the underlying diagnostic methods and "triage" algorithms. Most frank acute myocardial infarctions can be rapidly diagnosed on the basis of history, resting electrocardiogram, and rapid cardiac enzyme assays, principally creatine kinase, myoglobin, and troponins. Similarly, frank unstable angina can usually be recognized clinically and the individual patient's risk stratified reliably using the resting electrocardiogram and troponin measurements.

The greatest problem arises from the other patients with chest pain, often of recent onset. These patients do not describe severe prolonged episodes of classic cardiac pain with associated symptoms or a typical crescendo pattern of angina. They do, however, make up the bulk of the overnight, "chest pain-enzyme negative" or "chest pain-infarct excluded" admissions that are increasingly common.

An ideal system would allow rapid assessment of such patients and their categorization into high-risk patients requiring admission; intermediate risk patients with angina but no need for urgent admission; and low risk patients, unlikely to have clinically important coronary disease.

Chest pain clinics offer two crucial additional factors. First, they provide standardized evidence based management using an exercise electrocardiogram and an algorithm or guideline. Second, patients are reviewed by a hospital cardiologist with an expertise honed by seeing many such patients, unlike most junior hospital doctors.

The concept of a chest pain clinic is not new, and its rationale is simple. First, exert ional cardiac chest pain is common, frightening for the patient, and worrying for general practitioners and the emergency room physicians since it can be difficult to distinguish cardiac from non-cardiac pain. Second, exert ional angina can progress to unstable angina, acute myocardial infarction, or death[3,4]. Predicting a stable clinical course from symptoms alone is difficult. A resting electrocardiogram is usually unhelpful in assessing risk as it is normal in over 90% of new patients[5]. Life threatening complications occur in the short term, sometimes within days or weeks of medical presentation. In the only study of natural history of exert ional angina in the community, based in a chest pain clinic, 14% of patients receiving only sublingual glyceryl trinitrate developed serious complications within six months of presentation, most of them within the first four weeks[3].

Third, non-invasive techniques particularly stress test in acute phase can risk stratify patients by showing the degree of reversible ischaemia, thus identifying those requiring immediate angiography. Fourth, treatments to relieve symptoms and improve prognosis can be given: aspirin, statins, angiotensin converting enzyme inhibitors, and revascularisation[6-9].

The true benefit of a chest pain clinic may be a reduction in admissions of anything from 20% to 80%. Thus launching chest pain clinics has a strong clinical rationale and will radically transform assessment and management of angina. Yet what evidence is there that this model of care will improve outcomes? There is no randomized controlled trial to show that prompt assessment and management reduces coronary morbidity and mortality. A clinical trial is required to assess the impact of rapid medical and surgical management of exert ional angina.

We are fortunate to have such a service in the Kingdom of Bahrain. The Cardiac Center of Mohammed Bin Khalifa Bin Salman Al Khalifa has adopted this concept since September of 2004.

{Include our Data}

The data clearly demonstrate the rate of admission had decreased allowing better proper utilization of resources.

We need to capture this unique national experience by monitoring the frequency, management, and prognosis of exert ional angina through these clinics. To do so we need to collect a common core dataset to form a national database.

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