CLINICAL PRESENTATION OF MYOCARDIAL INFARCTION IN THE ELDERLY

Summary

A one-year study of elderly in-patients with myocardial infarction in a district general hospital suggests that atypical presentation may be less common than previously thought.

INTRODUCTION

It is generally accepted that the clinical presentation of myocardial infarction in the elderly is extremely variable. Rodstein in 1956 found in a residential home that 29% of elderly people with non-fatal episodes of myocardial infarction presented with chest pain. In 1967 Pathy demonstrated this mode of onset in only 19% of a personal series of hospital admissions. This study records the clinical presentation of all elderly patients with myocardial infarction admitted to hospital from one district health authority during one year.

Method

In the district health authority chosen for the study, all medical emergencies over the age of 65 years are admitted to the geriatric department of the district general hospital, under the care of one consultant geriatrician who has access to unlimited emergency beds. Any medical problems developing in elderly patients in other wards in the hospital are referred to the geriatric department. There is no coronary care unit or intensive care unit in the hospital. All elderly patients have an electrocardiograph (ECG) and cardiac enzyme test routinely on admission. It can be assumed therefore that all cases of myocardial infarction in elderly in-patients are managed by this one department. Patients were accepted into the study if they fulfilled the following criteria of ECG changes:

(a) Evolution of WHO (1959) criteria IA (c) (the direct injury current) or IA (a-d) developing after a normal ECG obtained during the disease event.
(b) Typical Q and T wave changes [WHO criteria IA (a) to IB (o)] in association with a rise of twice normal in cardiac enzymes, namely creatine phosphokinase and hydroxybutyrate dehydrogenase, with isoenzyme of creatine phosphokinase where equivocal.

Cases of sudden death with no prior electrocardiographic or biochemical evidence of myocardial infarction were not included in the study.
RESULTS

There were 87 patients included in the study over a one-year period. Of these, 58.6% (51) were male, although males made up only 43.5% of all admissions to the geriatric unit over this period. There was no significant difference in age between male and female, the average age of all myocardial infarctions being 73.8 years (range 65–95 years). The patients were classified into groups according to their principal symptom, although they may also have had symptoms from other groups (see Table). No patient other than in group 1 had chest pain or tightness. The one patient in group 7 became quite rational within 72 hours and then denied having had chest pain, although this must obviously be taken with reserve.

<table>
<thead>
<tr>
<th>Group</th>
<th>Presentation</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Classical</td>
<td>51</td>
</tr>
<tr>
<td>2</td>
<td>S.O.B./failure</td>
<td>19</td>
</tr>
<tr>
<td>3</td>
<td>Stroke</td>
<td>6</td>
</tr>
<tr>
<td>4</td>
<td>Syncope</td>
<td>4</td>
</tr>
<tr>
<td>5</td>
<td>Giddiness</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>Weakness</td>
<td>2</td>
</tr>
<tr>
<td>7</td>
<td>Confusion</td>
<td>1</td>
</tr>
<tr>
<td>8</td>
<td>Silent</td>
<td>1</td>
</tr>
</tbody>
</table>

Classical or typical onset, with chest pain or tightness, was the commonest mode of onset (58.6%). Sudden dyspnoea, or acute exacerbation of existing heart failure, was the next most common at 21.8%. Other presentations included stroke, syncope, giddiness, weakness, and acute confusion. There was only one case where the myocardial infarction was regarded as silent, the patient having been admitted for elective surgery, and the diagnosis made on routine preoperative ECG and confirmed by serial cardiac enzymes. There was no statistical difference between age or sex of typical and atypical cases.

Of those who presented with chest pain, 11 (21.6%) had a history of previous angina, a much higher incidence than in any other group. Four out of five patients taking beta blockers had chest pain.

There were 33 deaths (37.9%), there being no significant correlation with age, sex or mode of onset, other than stroke, in which group all six patients died. Those patients with stroke did not have higher levels of creatine phosphokinase than the non-stroke group. Death in those patients with chest pain occurred on average on the seventh day (range 1–20), while death in the atypical group occurred on the nineteenth day (range 1–45).

There was a trend towards a higher admission rate of myocardial infarctions in the summer months (Figure) which was the reverse pattern of total admissions to the department during the year. There were more deaths during the summer months, but this correlated exactly with the admission rate.
Clinical Presentation of Myocardial Infarction in the Elderly

**Discussion**

Results of studies on presentation of myocardial infarction in the elderly depend on admission policy to the unit concerned. Pathy in 1967 showed a low incidence of chest pain of 19% but stated that this was a 'culled' group. In that particular area health authority, patients aged 65-75 years with 'classical' presentation of myocardial infarction might be accepted into coronary care unit or general medical ward. Williams et al. in 1976 showed an incidence of chest pain or discomfort in 89% of elderly admissions to a coronary care unit, but stated that on the basis of the admission policy, all the patients might be expected to have a more classical presentation. Painless myocardial infarction has been reported as more common in psychotic patients (Marchand 1955). In this study only one patient was confused, and therefore unreliable in symptomatology. It may be that other symptoms such as shortness of breath overshadowed chest pain, or that awareness of pain in general is depressed in the elderly.

Previous angina was more common in the group presenting with chest pain. Eleven patients out of 51 (21.6%) with chest pain had previous angina. This compares with 25% in Pathy's study. Williams found that 53% of elderly coronaries had previous angina, but did not state how many of these presented with chest pain at infarction. The high incidence of angina no doubt reflects the admission policy of a coronary care unit.

Thompson and Robinson (1978) demonstrated an increased incidence of stroke in myocardial infarction where creatine phosphokinase was in the upper third of the range of values. This small study does not confirm this finding, although mortality in this group was 100%, compared with Thompson's 54%.
Mortality from myocardial infarction in the general population is known to increase with age (Williams et al. 1976), but this small study does not show any significant difference in the 'young' old and the very old.

It may be concluded that myocardial infarction in the elderly may have a spectrum of presentation similar to that of the young adult, if all cases are taken into account, and patients are not preselected by symptomatology for admission to specialized units such as coronary care units or geriatric departments.

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REFERENCES


