Inpatient Telemetry Does Not Need To Be Used in the Management of Older Patients Hospitalized With Chest Pain at Low Risk for In-Hospital Coronary Events and Mortality

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**Background.** Little is known about patients admitted with chest pain to inpatient telemetry units directly from an emergency department.

**Methods.** We analyzed data from 105 consecutive patients who presented with chest pain to an emergency department and who were hospitalized in an inpatient telemetry unit but who were at low risk for a coronary event.

**Results.** Telemetry yielded no information which was used to manage any patient. None of the 105 patients (0%) developed a myocardial infarction or died during hospitalization. At 4.8-year follow-up, 8 of 105 patients (8%) died. Significant risk factors for long-term mortality were age ($p < .001$), prior coronary artery disease ($p < .05$), and diabetes ($p < .02$).

**Conclusions.** Inpatient telemetry was of no value in predicting short-term coronary events or mortality or long-term mortality in low-risk patients hospitalized with chest pain.

In many hospitals, inpatient telemetry units function as intermediate coronary care units (1–7). However, little is known about patients admitted with chest pain to inpatient telemetry units directly from an emergency department.

We are reporting data showing that inpatient telemetry is of no value in predicting in-hospital mortality, myocardial infarction, or other cardiac complications in low-risk patients hospitalized with chest pain from an emergency department. We are also reporting data showing the baseline characteristics of survivors versus nonsurvivors at long-term follow-up in this low-risk population.

**METHODS**

We analyzed the medical records from 105 consecutive patients who presented with chest pain to the emergency department at Westchester Medical Center/New York Medical College who were hospitalized in a telemetry unit but who were at low risk for a coronary event. Telemetry was performed with a SpaceLabs model 90308-11-15 recorder (Redmond, WA) using electrocardiographic leads I, II, III, V₄, and V₅. None of the 105 patients had evidence of ST-segment elevation, ST-segment depression, T wave inversion, or new electrocardiographic abnormalities on serial electrocardiograms, an elevated serum creatine kinase-MB ($>10\%$), an elevated serum cardiac-specific troponin I level ($>2$ ng/ml); hypotension, ventricular tachycardia, or an invasive intervention, and, therefore, were at low risk for a coronary event. The duration of telemetry monitoring was 48 hours.

We investigated whether the information obtained from telemetry changed the management of these low-risk patients or identified patients at risk for in-hospital mortality, myocardial infarction, or other cardiac complications. We also investigated the baseline characteristics of survivors versus nonsurvivors at long-term follow-up in this population. Mean follow-up was $4.8 \pm 0.5$ years.

The baseline variables investigated were sex, age, prior coronary artery disease, current cigarette smoking, hypertension (systolic blood pressure of $\geq 140$ mmHg, diastolic blood pressure of $\geq 90$ mmHg, or treatment for hypertension), diabetes mellitus (fasting blood sugar $\geq 126$ mg/dl or treatment for diabetes mellitus), and hypercholesterolemia (serum total cholesterol $\geq 200$ mg/dl or treatment for hypercholesterolemia).

Student’s $t$ tests were used to analyze continuous variables. Fisher’s exact tests and chi-square tests were used to analyze dichotomous variables.

**RESULTS**

Telemetry showed no electrocardiographic abnormalities or arrhythmias that influenced patient management in any of the 105 patients. None of the 105 patients (0%) died or developed a myocardial infarction or other cardiac complication during hospitalization. Telemetry was of no value in predicting in-hospital mortality or myocardial infarction or in predicting long-term mortality at follow-up.

Table 1 shows the baseline characteristics of patients at low risk for coronary events who died versus those who...
At 4.8-year follow-up, 8 of 105 patients (7.6%) died (1.6% per year). Significant risk factors for long-term mortality in this low-risk population were age ($p < .001$), prior coronary artery disease ($p < .05$), and diabetes mellitus ($p < .02$). We conclude from our data and from other studies (7,8) that telemetry should not be used in older patients hospitalized with chest pain who are at low risk for coronary events and mortality.

**ACKNOWLEDGMENT**

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**REFERENCES**


**Table 1. Baseline Characteristics of Patients at Low Risk for New Coronary Events Who Died Versus Survived at 4.8-Year Follow-Up**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Died (N = 8)</th>
<th>Alive (N = 97)</th>
<th>p Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. (%)</td>
<td>No. (%)</td>
<td></td>
</tr>
<tr>
<td>Men</td>
<td>5 (63%)</td>
<td>61 (62%)</td>
<td>NS</td>
</tr>
<tr>
<td>Women</td>
<td>3 (37%)</td>
<td>36 (38%)</td>
<td>NS</td>
</tr>
<tr>
<td>Age, y</td>
<td>74 ± 6</td>
<td>57 ± 8</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Prior coronary artery disease</td>
<td>7 (88%)</td>
<td>50 (52%)</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>Smoking</td>
<td>4 (50%)</td>
<td>31 (32%)</td>
<td>NS</td>
</tr>
<tr>
<td>Hypertension</td>
<td>6 (75%)</td>
<td>52 (54%)</td>
<td>NS</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>4 (50%)</td>
<td>15 (15%)</td>
<td>&lt;.02</td>
</tr>
<tr>
<td>Hypercholesterolemia</td>
<td>6 (75%)</td>
<td>52 (54%)</td>
<td>NS</td>
</tr>
</tbody>
</table>

*Note: NS = not significant.*

**DISCUSSION**

Hollander and colleagues (7) demonstrated that only 1 of 261 low-risk patients with chest pain (0.4%) admitted to a telemetry unit benefited from telemetry. Durairaj and colleagues (8) observed no major complications in 314 very low-risk patients with chest pain admitted to a telemetry unit.

The data from the present study showed that telemetry was of no value in predicting in-hospital mortality, myocardial infarction, or other cardiac complications in low-risk patients admitted from an emergency department to a telemetry unit. These low-risk patients had no new electrocardiographic abnormalities on serial electrocardiograms, normal levels of serum creatine kinase-MB and cardiac-specific troponin I, no hypotension, no ventricular tachycardia, and no invasive intervention. Telemetry was also of no value in predicting long-term mortality in this low-risk population.

**At 4.8-year follow-up, 8 of 105 patients (7.6%) died (1.6% per year). Significant risk factors for long-term mortality in this low-risk population were age (p < .001), prior coronary artery disease (p < .05), and diabetes mellitus (p < .02). We conclude from our data and from other studies (7,8) that telemetry should not be used in older patients hospitalized with chest pain who are at low risk for coronary events and mortality.**