A Prospective, Controlled Trial of Technology-assisted Pharmacist Intervention to Improve Adherence to Coronary Artery Disease Secondary Prevention Medication Guidelines in Hospitalized Patients.

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We used computerized alerts to identify patients with elevated troponin levels. In the intervention group, pharmacists performed one-on-one physician education about secondary prevention medications. Control group patients received standard care. The intervention had a significant impact on the proportion of patients discharged on ACE-inhibitors (378/458 [83%] vs. 303/340 [89%], p=0.009), beta-blockers (416/457 [91%] vs. 342/358 [96%], p=0.012), and statins (293/347 [84%] vs. 258/281 [92%], p=0.005), but no impact on aspirin use (464/482 [96%] vs. 372/385 [97%], p=0.778). Computerized alerts coupled with academic detailing is an effective means to increase physician adherence to coronary artery disease secondary prevention guidelines.

Aspirin, beta-blockers, angiotensin-converting enzyme (ACE) inhibitors, and lipid lowering agents have significant morbidity and mortality benefits in patients with acute myocardial infarction (AMI), but are not optimally used.3,4 In this study, we used computerized alerts and academic detailing to improve adherence to AMI secondary prevention guidelines.

Methods

Patients with elevated troponin-I levels were identified using a real-time clinical database, and a clinical pharmacist was notified with this information via an automated daily e-mailed list. Pharmacists discussed secondary prevention recommendations with physicians caring for patients in the intervention group, while control group patients were simply observed, noting exclusions for individual drug classes.

Differences in the proportions of patients discharged on secondary prevention medications between the intervention and control groups were analyzed using the Chi-square test.

Results

Between February 1, 2000 and May 31, 2001, we identified 1541 inpatient registrations with an abnormally elevated troponin level within 24 hours of admission. Of these, 894 (58%) were considered eligible for the study and were assigned to intervention (n=391) and control (n=503) groups.

The intervention had a statistically significant impact on the proportion of patients discharged on these secondary prevention medications who had no specific contraindications for these agents (Table).

Conclusions:

Using an automated notification system to identify hospitalized patients with elevated troponin levels, coupled with academic detailing of physicians by clinical pharmacists, has a significant impact on the rate of adherence to secondary prevention guidelines.

Table. Proportion of eligible patients discharged on secondary prevention medications

<table>
<thead>
<tr>
<th>Drug Class</th>
<th>Control Group</th>
<th>Intervention Group</th>
<th>P</th>
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<tbody>
<tr>
<td>ACE-inhibitor</td>
<td>378/458 (83%)</td>
<td>303/340 (89%)</td>
<td>0.009</td>
</tr>
<tr>
<td>Aspirin</td>
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<td>372/385 (97%)</td>
<td>0.778</td>
</tr>
<tr>
<td>Beta-blocker</td>
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<td>342/358 (96%)</td>
<td>0.012</td>
</tr>
<tr>
<td>Statin</td>
<td>293/347 (84%)</td>
<td>258/281 (92%)</td>
<td>0.005</td>
</tr>
<tr>
<td>All four</td>
<td>353/503 (70%)</td>
<td>329/391 (84%)</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

References


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