Haenszel Chi-square Analysis also allows a comparison of the frequency of cardiac complications between the two groups controlled for each of the three CRI classes; the patients of Jeffrey et al. have significantly more complications than those of Goldman et al. (Summary MHX² = 10.8, P = 0.001). A summary relative risk ratio also is calculable that shows that elective abdominal aortic surgery has more than three times (odds ratio = 3.19) as many cardiac complications than a more heterogenous group of surgical procedures. Thus the ability of the CRI to discriminate outcome (cardiac complications) has been demonstrated, although the group studied had three times higher risk of cardiac complications than the reference population.

I feel that the conclusion of Jeffrey et al.² is unduly harsh. Yes, there is a difference in complication rate between the heterogenous group in the original study and the more specific group studied by Jeffrey et al., but the general power of the CRI (increasing morbidity with higher scores) has been confirmed.

In reply—We agree with Dr. Pace’s conclusion. The CRI¹ does show an increasing morbidity with higher scores. This again has been confirmed in a study by Domaine et al.² (table 1). They evaluated a group of patients undergoing a variety of elective and emergency vascular surgical procedures. Their results were similar to ours. Each class showed a higher morbidity and mortality than would have been expected using Goldman’s population as a model.

The two points we wish to make are 1) patients who are evaluated using the CRI may have substantially different risk levels than indicated by the incidence of morbidity and mortality in Goldman’s study; 2) the trend of higher morbidity and mortality with higher scores has not been confirmed for nonvascular surgical procedures.

**TABLE 1. A Comparison of Postoperative Cardiac Complications and Death between Goldman’s and Domaine’s Populations**

<table>
<thead>
<tr>
<th>Goldman class</th>
<th>Life-threatening complications</th>
<th>Cardiac death</th>
<th>Sample size</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>3 (6.0%)*</td>
<td>1 (2.0%)</td>
<td>50</td>
</tr>
<tr>
<td>II</td>
<td>3 (8.8%)</td>
<td>2 (5.9%)*</td>
<td>34</td>
</tr>
<tr>
<td>III</td>
<td>5 (31.2%)*</td>
<td>3 (18.7%)*</td>
<td>16</td>
</tr>
</tbody>
</table>

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REFERENCES


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