Correspondence


Studies on innocent praeocardial vibratory murmurs in children

Sir,

The tabulated standard errors of the mean (SEM) of the pre-ejection period (PEP) (papers by van der Hoeven et al., British Heart Journal (1973), 38, 669 and 679) imply remarkably similar standard deviations for each age subgroup. This might suggest that the standard deviation of the 52 controls rather than that of each age subgroup was used to calculate the standard errors of the PEPs. Because of the brevity of the summary, an explicit account of the significance test of the 15 innocent praeocardial vibratory murmurs versus the 52 controls would permit a more critical review.

Calculations also show discrepancies between published and calculated values of the SEMs of both left ventricular ejection time (LVET) and PEP for both the 15 innocent praeocardial vibratory murmurs and the 15 matched controls.

Most importantly, analysis of the published complete data on the 15 innocent praeocardial vibratory murmurs and 15 matched controls refutes the authors' claim of a significant difference at the level P=0.05 between the PEPs. No significant difference at the 0.05 level was found using a paired t-test. An independent two-tailed t-test also revealed no significant difference at the 0.05 level. Only with a one-tailed test was significance found at the 0.05 level. However, the use and justification of a one-tailed test is not at all evident in the papers.

Therefore, we query the authors' statistical method from which significance was found in the matched control series as well as the unmatched series.

Dean F. Wong, Elinor M. Swan,
and Adele Csima,
Division of Cardiology,
The Hospital for Sick Children;
and
Department of Preventive Medicine
and Biostatistics,
University of Toronto,
Toronto, Canada.

This letter was shown to G. M. A. van der Hoeven and his colleagues, who reply as follows:

Sir,

We appreciate the comments of Mr. Wong and colleagues on our papers on innocent praeocardial vibratory murmur in children.

For the group of 85 normal children (Group A), whose ages are between 1 and 20 years, the calculated relation between pre-ejection period (PEP) and heart rate (HR) is

\[
PEP = -0.33HR + 113 \text{ (ms) (Eq. 1)}
\]

\[
Syx^1 = SD (PEPc) = 11.7.
\]

Using this we found PEP values corrected for heart rate

\[
PEPc = PEP + 0.33HR \text{ (Eq. 2)}
\]

We used the \( Syx = 11.7 \) of the total group to calculate the SEM's for each subgroup, despite smaller actual standard deviations of the 4 subgroups. The SD for PEP values and the SD for PEPc values were for the four subgroups resp.: 10.4, 10.1, 11.6, 7.07 and 9.3, 8.9, 11.5, 6.6.

The rationale for taking the larger value was to take into account possible future interobserver differences and the fact that each subgroup consists only of a very small number of subjects. We regret not having mentioned these reasons explicitly in our papers.

In the second paper (2), we compared the PEP values of 15 children with innocent praeocardial vibratory murmurs and a subgroup of 52 normal children, between 1 and 10 years, taken from the total group A. The regression equation for this subgroup B is:

\[
PEP = -0.32HR + 110 \text{ (ms) } Syx = 9.0.
\]

From this group B, a second subgroup of 15 children was taken to serve as an age matched control group for the 15 children with innocent praeocardial vibratory murmurs.

The difference in PEP between children without and with an innocent praeocardial vibratory murmur is calculated using PEPc (Eq. 2).

The heart rate corrected PEP values and the standard deviations for all groups are:

\[Syx = \text{sample standard deviation from regression.}\]
We concluded that children with innocent praecordial murmurs have a shorter PEP than children without one. Knowing this, a one-tailed Student t-test may be used to compare the controls and the innocent praecordial vibratory murmurs. The PEPc of the children with innocent praecordial vibratory murmurs is significantly shorter than matched controls (P < 0.05).

Using a non-parametric method (Wilcoxon signed rank test) the same conclusion may be drawn.

<table>
<thead>
<tr>
<th>Group</th>
<th>Age</th>
<th>Mean age</th>
<th>No.</th>
<th>PEPc</th>
<th>SD (PEPc)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Group A</td>
<td>1-20</td>
<td>9·1</td>
<td>85</td>
<td>113·2</td>
<td>11·7</td>
</tr>
<tr>
<td>Group B</td>
<td>1-10</td>
<td>6·0</td>
<td>52</td>
<td>110·3</td>
<td>9·04</td>
</tr>
<tr>
<td>Controls</td>
<td>3-10</td>
<td>6·2</td>
<td>15</td>
<td>107·9</td>
<td>8·63</td>
</tr>
<tr>
<td>IPVM</td>
<td>3-10</td>
<td>5·9</td>
<td>15</td>
<td>100·6</td>
<td>11·94</td>
</tr>
</tbody>
</table>

Using the two-tailed Student’s t-test for independent samples the values of PEPc for the children with innocent praecordial vibratory murmurs are significantly different with respect to the PEPc value of group B (P < 0·01).

G. M. A van der Hoeven and C. de Monchy, Institute of Medical Physics TNO, PO Box 5011, Utrecht, Holland.

Successful aortic valve replacement for aortic regurgitation associated with osteogenesis imperfecta

Sir:
The paper by Weisinger et al. (British Heart Journal, 1975, 37, 475) is similar to a published report by me (Pijoan de Beristain, 1973). This paper described a mother and son with aortic regurgitation associated with osteogenesis imperfecta. The mother died in 1960 but the son was operated on successfully in 1966 and is still alive and doing well. The surgeon’s description of the aortic wall was similar to that of Weisinger et al. and also to that found in Marfan’s disease.

I believe that in every case of isolated aortic regurgitation the stigmata of Marfan’s syndrome and osteogenesis imperfecta must be looked for.

Carlos Pijoan de Beristain, Servicio de Cardiología, Policlinica del Sagrado Corazon de Jesus, Barcelona-11, Spain.

Reference
Letter: Studies on innocent praecordial vibratory murmurs in children.

Br Heart J 1976 38: 309-310
doi: 10.1136/hrt.38.3.309

Updated information and services can be found at:
http://heart.bmj.com/content/38/3/309.citation

Email alerting service
Receive free email alerts when new articles cite this article. Sign up in the box at the top right corner of the online article.

Notes

To request permissions go to:
http://group.bmj.com/group/rights-licensing/permissions

To order reprints go to:
http://journals.bmj.com/cgi/reprintform

To subscribe to BMJ go to:
http://group.bmj.com/subscribe/