Deep venous thrombosis after myocardial infarction: predisposing factors

Sir,

The paper 'Deep venous thrombosis after myocardial infarction: predisposing factors' by A. V. Simmons *et al.*, which appeared in the *British Heart Journal* (35, p. 623), contains substantial statistical errors which invalidate some of their conclusions. They have used conventional χ^2 testing but each of their χ^2 values is incorrect. The most glaring example is in Table 3 where the correct χ^2 value, using Yates correction, is 8.38 and not 84.1 as they stated.

Not only is every χ^2 calculation wrong but in some instances false conclusions have been drawn. Thus the authors state that deep venous thrombosis occurs more commonly in patients who are 'over the age of 60, in those with a previous history of angina, and in those who develop left or congestive heart failure or significant dysrhythmias'. In fact their data suggest that the high risk group is in patients over 60, and in those who develop left or congestive cardiac failure. The incidence of deep vein thrombosis in those with previous angina is 20 per cent and in those without previous angina is 34 per cent which indicates exactly the opposite to the authors' conclusions though it does not reach statistical significance.

The paper is, therefore, full of statistical errors which invalidate the conclusions that angina and dysrhythmias predispose patients to deep vein thrombosis. Fortunately the other conclusions are still valid though the methods used to quantitate their validity are wrong.

Yours, etc.

C. P. Warlow,
Department of Medicine,
Foresterhill,
Aberdeen.

This letter was shown to Drs. Simmons, Sheppard, and Cox who commented as follows:

Sir,

Some of the points which Dr. Warlow mentions

arise because of typographical errors and we are grateful for the opportunity to point these out. These were:

1) Table 1 Previous angina pectoris

The figures relating to angina, present and absent, should be reversed and presented as follows:

	With DVT	Without DVT
Present	13	25
Absent	10	40
Unknown	1	0

2) Table 1 Congestive heart failure

The word 'not' has been added and it should read

The χ^2 value is significant at 95 per cent.

3) Table 3 High and low risk groups

With regard to the χ^2 value, the decimal point has been placed incorrectly and the figure should have read 8.41.

Dr Warlow, in calculating χ^2 values, has made use of Yates correction, presumably adjusting estimated values by 0.5 where appropriate. As all our calculations were done in terms of whole numbers of patients we did not feel that its application was warranted. In the clinical groupings where Dr Warlow has observed a difference in significance when compared with our findings his values of χ^2 are barely insignificant at the 95 per cent level. Thus we do not think that our conclusions that these patients are 'more likely to develop deep venous thrombosis' are affected. We feel that our observations are borne out by the χ^2 value in Table 3 which Dr Warlow, as well as ourselves, has no doubt about accepting as statistically significant.

Yours, etc.

A. V. Simmons, M. Sheppard,
and A. F. Cox
Regional Medical Physical Unit,
Cookridge Hospital, Leeds.