Serum potassium response to nebulized salbutamol

Sir

If the adrenalin-mediated side-effects of nebulized Salbutamol were entirely determined by its systemic absorption, one would have expected to have demonstrated a significant correlation between pre-treatment, peak expiratory flow rate (PEFR) and hypokalaemia. In our study, however, patients 5, 17 and 19 failed to respond in a manner that was in keeping with this postulation. Similarly, the quoted discrepancies noted by Ind et al. and Zimmerman indicate that there is more to the problem than mere absorption, important as this factor might be.

My own feelings are that in a given patient, the hypokalaemic response to Salbutamol will also be determined by the pre-existing pH, pO2, pCO2, and previous medication (corticosteroids, Theophylline, etc). Interestingly, our study indicates that if an attack of asthma is severe enough to induce respiratory acidosis, nebulized Salbutamol does not induce hypokalaemia.

There is now a trend towards administering intravenous potassium supplements concurrently with intravenous Salbutamol. With regards to nebulized Salbutamol, however, there are two paths to consider. Once can either begin to use potassium supplements routinely, or one can try and identify specific patient subgroups who are at risk of developing hypokalaemia. Hopefully, we shall soon be treated to a good quality study, based on the latter more logical approach.

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Trauma audit

Sir

May I comment on some of the logical and statistical aspects of the interesting series of papers on trauma audit in the June issue of Archives of Emergency Medicine.

The concept of Probability of survival or of death is crucial to these studies. In the numerical form of say Ps = 0.6 derived from TRISS or from ISS/Age, the implication is that of 10 such cases it is estimated that 6 will survive and 4 will die. The particular patient may be one of the ‘4’ or one of the ‘6’. It follows that the use of the Ps value in respect of a single case is quite limited. It might conceivably be used like the ‘form’ of horses as the basis for laying bets but it does not mean that this case is ‘expected’ to live; nor, if the Ps value were 0.4, would it mean that he is ‘expected’ to die. Not all races are won by odds-on favourites!