(mean 58·8 (23·1)) than those with lower scores (mean 37·8, (22·5); Mann-Whitney U test $Z=2·22$, $p<0·05$). Self assessed ability was not related to objectively assessed basic life support skills.

Sisters/charge nurses were significantly more confident than staff nurses about performing basic life support; (Kruskal-Wallis one way analysis of variance: χ^2 5·91, $p<0·05$; Mann-Whitney U test: $Z=2·34$); in fact, however, they were no more competent. Nurses who had attended more arrests were more confident about performing basic life support (Kruskal-Wallis one way analysis of variance: χ^2 15·55, $p<0·005$), although again they were no more competent. There was no relation between the post held and the number of arrests attended.

Comment

Our results show that the basic life support skills of nurses trained in the United Kingdom are as poor as those reported for nurses in the United States[2,3] and for preregistration and postregistration doctors.[4,5] Self assessed ability was unrelated to objectively assessed performance. Experience of attending cardiac arrests and seniority were associated with increased confidence but were not matched by an increase in skills. As nurses cannot accurately assess their own skills at basic life support, this study highlights the fact that compulsory retraining programmes are necessary, as those with poor skills will not necessarily seek further training.

1 Resuscitation Council. *Resuscitation for the citizen*. London: Resuscitation Council, 1984.
2 Gass EA, Curry L. Physicians' and nurses' retention of knowledge and skills after training in CPR. *Can Med Assoc J* 1983;128:550-1.
3 Kaye W, Mancini ME. Retention of cardiopulmonary resuscitation skills by physicians, registered nurses and the general public. *Crit Care Med* 1986;14:621-3.
4 Casey WF. Cardiopulmonary resuscitation: a survey of standards among junior hospital doctors. *J R Soc Med* 1984;77:921-4.
5 Skinner DV. Cardiopulmonary skills of preregistration house officers. *Br Med J* 1985;290:1549-50.

(Accepted 9 February 1987)

Cardiology Department, Royal Free Hospital, London and Psychology Unit, Royal Free Hospital School of Medicine, London NW3 2QG

G WYNNE, BSC, RGN, resuscitation training officer
T M MARTEAU, BSC, PHD, lecturer in health psychology
M JOHNSTON, BSC, PHD, senior lecturer in clinical psychology
C A WHITELEY, RGN, sister, coronary care unit
T R EVANS, MB, FRCP, consultant cardiologist

Correspondence to: Miss G Wynne.

Fibreoptic bronchoscopy and the use of antibiotic prophylaxis

McShane and Hone recently suggested that nasal intubation for anaesthesia causes bacteraemia and should be covered by antibiotics in patients at risk of endocarditis.[1] Fibreoptic bronchoscopy, however, which is usually carried out by introducing the bronchoscope through the nose, does not apparently lead to bacteraemia.[2,3] This discrepancy may be the result of differences in the time at which the various authors looked for bacteraemia; in the case of fibreoptic bronchoscopy the available evidence relates to the period after bronchoscopy rather than during bronchoscopy. We have looked for bacteraemia immediately after the start of fibreoptic bronchoscopy and during the procedure, a period which corresponds more closely to that chosen by McShane and Hone.

Patients, methods, and results

We studied 73 patients with respiratory disease undergoing bronchoscopy. Seven of the patients had recently taken antibiotics (ampicillin or amoxycillin in four cases, erythromycin in three), but the remainder had not taken antibiotics for at least one week. The bronchoscope (Olympus BF10) was passed through the nose after the nasopharynx had been sprayed with lignocaine (4%). Blood samples were taken immediately before and one to 10 minutes after the start of bronchoscopy. This period was chosen to cover bacteraemia which might occur on introducing the bronchoscope and also any subsequent bacteraemia caused by manipulating the instrument during the procedure. After preparation of the venepuncture site with 70% isopropyl alcohol 20 ml of blood was taken and divided between aerobic and anaerobic blood culture bottles (London Analytical and Biological Media Ltd). The bottles were incubated for 72 hours before being subcultured. A second and final subculture was performed at nine days. Transbronchial biopsy samples were not taken during any of the bronchoscopies.

One to two minutes after the start of bronchoscopy one of 22 patients had a positive culture. With increasing intervals, up to 10 minutes, only one further positive result was obtained from 51 patients. Four blood cultures taken before bronchoscopy were also positive (table). Of 292 blood culture bottles inoculated, eight gave positive results (2·7%); all isolates were organisms commonly found on the skin (coagulase negative staphylococcus, *Corynebacterium* sp) or in the environment (*Bacillus* sp). There was no significant difference between the number of positive cultures obtained before and after the start of bronchoscopy ($p>0·5$, χ^2 analysis with Yates's correction for small numbers).

Details of isolates obtained from five patients with positive blood cultures*

Case No	Time of blood culture in relation to the start of bronchoscopy: Before	After
1	*Bacillus* sp (1 bottle)	No growth
2	Coagulase negative Staphylococcus (both bottles)	Coagulase negative Staphylococcus (1 bottle)
3	*Corynebacterium* sp (1 bottle: 2nd subculture)	No growth
4	Coagulase negative Staphylococcus (1 bottle)	No growth
5	No growth	Coagulase negative Staphylococcus (both bottles)

*All isolates were obtained from the first subculture unless otherwise indicated.

Comment

The nasal passages are usually colonised with coagulase negative staphylococci and *Corynebacterium* spp, organisms which are also common contaminants of blood cultures. Other organisms likely to be found in the nasal flora include *Staphylococcus aureus*, *Neisseria* spp, and *Haemophilus* spp, none of which are common causes of bacterial endocarditis. In the study of McShane and Hone half of the organisms isolated were *Staph epidermidis* (a coagulase negative staphylococcus), but they did not consider the possibility that any of these were contaminants.[1] Of the other isolates, most were organisms which rarely cause endocarditis: *H influenzae*, *Corynebacterium hofmannii*, and *Streptococcus pyogenes*. McShane and Hone isolated an α haemolytic streptococcus from only two patients; in both cases this was *Str sanguis*, a common cause of bacterial endocarditis. Their failure to take control blood cultures before nasal intubation means that these isolates may have represented pre-existing bacteraemia in patients with poor oral hygiene.

We did not find any difference between the number of positive cultures obtained before bronchoscopy and the number obtained during the procedure. The number and nature of isolates were entirely consistent with our usual experience of contaminated blood cultures. Whether or not the risk of bacteraemia is likely to be appreciably increased by taking transbronchial biopsy samples remains to be determined.

Our results support the view that antibiotic prophylaxis is not warranted in patients at risk of endocarditis when undergoing fibreoptic bronchoscopy. Furthermore, we believe that there is insufficient evidence to justify the use of such prophylaxis in patients undergoing nasal intubation.

We thank Dr N J Cooke for his cooperation and for allowing us to report data relating to his patients. We also thank Dr Y Kruszynska for valuable clinical help.

1 McShane AJ, Hone R. Prevention of bacterial endocarditis: does nasal intubation warrant prophylaxis? *Br Med J* 1986;292:26-7.
2 Kane RC, Cohen MH, Fossiecki BE Jr, Tvardzik AV. Absence of bacteremia after fiberoptic bronchoscopy. *Am Rev Respir Dis* 1975;111:102-4.
3 Pereira W, Kovnat DM, Kahn MA, Iacovino JR, Spivack ML, Snider GL. Fever and pneumonia after flexible fiberoptic bronchoscopy. *Am Rev Respir Dis* 1975;112:59-64.

(Accepted 13 February 1987)

Departments of Microbiology and Medicine, Leeds General Infirmary, Leeds LS1 3EX

J HAYNES, PHD, MB, senior registrar in microbiology
M A GREENSTONE, MD, MRCP, senior registrar in medicine

Correspondence to: Dr J Haynes, Department of Microbiology, York District Hospital, York YO3 7HE.