asthmatic and healthy subjects, indicating that increased numbers of neutrophils in the airways could not account for the bronchial hyperresponsiveness, which was present in all of our asthmatic subjects.

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High altitude testing of pulse oximeter

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Portable pulse oximeters are a useful monitoring tool for air ambulance work. Over the past 15 months I have used an oximeter (the Nellcor N-10 unit) when monitoring patients returning to Britain in a wide range of civil aircraft including a Lockheed Tristar, Boeing 737, Lear 35, De Havilland Twin Otter, Bandeirante, BAC 1-11, and Dash-7. The unit worked reliably in all these aircraft and gave results that were similar to those predicted up to the maximum altitude on these flights (11 000 feet; 3350 m). I tested whether the oximeter would work at higher altitudes and also noted the subjective effects of exposure to altitude hypoxia.

Method and results

The Cessna 310 is a twin engined unpressurised aircraft that can climb to a maximum altitude of 27 400 feet (8350 m). I used myself as a fit, unacclimatised subject with a normal haemoglobin concentration (147 g/l) and made readings of arterial oxygen saturation and pulse rate every 150 m up to 24 100 feet (7350 m). At this altitude my mental performance deteriorated considerably, and I was given 60% oxygen by mask. I continued to make readings up to 27 000 feet (8235 m), when the aircraft was unable to climb any more.

The figure shows the changes in oxygen saturation

Arterial oxygen concentration, pulse rate, and physical and mental symptoms with increasing altitude over 63 minutes

and pulse rate and the symptoms of hypoxia with altitude. Below a saturation of 50% the oximeter gave a delayed reading and therefore could not be considered reliable or easy to use. Above 50% saturation, both during the ascent and at high altitude when I was receiving oxygen, the unit was reliable and seemed unaffected by the change in pressure.

Comment

The Nellcor N-10 pulse oximeter worked reliably up to an altitude of 27 000 feet (8235 m), although it was difficult to use at oxygen saturations below 50%.

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Current practice in managing urinary tract infections in children

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The management of urinary tract infections in paediatrics is controversial. Recently, with the advent of sophisticated imaging techniques, many different diagnostic pathways have been advocated.^{1,2} We conducted a survey of paediatricians in both district general and teaching hospitals to elucidate current practice in the United Kingdom.

Methods and results

From a total of 745 consultant paediatricians 120 were randomly selected and sent a detailed questionnaire concerning the investigation, treatment, and follow up of children with urinary tract infections. Ninety eight consultants (82%) replied, including

16 who were not concerned with managing these infections, one who did not complete the questionnaire, and two who completed one questionnaire between them. Thus we analysed a total of 80 questionnaires.

The table shows the responses to five questions. A further question concerned the investigations that were performed after a proved infection had been found and whether they depended on sex and the number of infections. The results were analysed into broad categories: 22 respondents routinely obtained only an ultrasound scan or an intravenous urogram; 26 obtained an ultrasound scan or a urogram in all patients and a micturating cystourethrogram either in all patients or in those below a specified age; 17 obtained an ultrasound scan or an intravenous urogram, a cystourethrogram, and either a diethylenetriamine penta-acetic acid (DTPA) scan or a succimer (DMSA) scan; 11 obtained an ultrasound scan or a urogram and a cystourethrogram and requested diethylenetriamine penta-acetic acid or succimer scans if the results of any of the first three were abnormal; and four gave replies that did not fit into any of the above categories.

Thirty three respondents thought that boys should