Key messages

- Acute mountain sickness can be treated naturally by controlled descent or artificially in a hyperbaric chamber to increase air pressure or with drugs
- Simulated descent in a hyperbaric chamber quickly relieves symptoms but the effect is short lived
- The drug dexamethasone takes longer to work but the effect is longer lasting
- A combination of the two methods may be the treatment of choice when the subject cannot be transported to lower altitudes

not show any long term beneficial effect of a 3 hour stay in the hyperbaric chamber,²¹ so prolonging treatment is unlikely to have better long term results. Nevertheless, commercially available hyperbaric chambers are widely recommended for trekking parties and expeditions to extreme altitudes. According to anecdotal reports its use in the Himalayas has not prevented death from acute mountain sickness in trekking parties.

Although the pressure bag represents a light and inexhaustible option for increasing oxygen tension, its correct handling at high altitude under difficult weather conditions is strenuous. The maintenance of a therapeutic pressure and a sufficient air flow by using manual pumps in these altitudes represents an enormous physical strain for the rescuers.

In our study dexamethasone proved to be efficient in treatment of acute mountain sickness. The reduction of symptoms of acute mountain sickness with dexamethasone coincided with an increase in arterial oxygen saturation. Compared with hyperbaric treatment the administration of dexamethasone is remarkably simple and results in slower improvement but longer lasting relief of symptoms. These observations led us to conclude that dexamethasone is the treatment of choice for the cerebral form of severe acute mountain sickness. Despite its disadvantages, the hyperbaric chamber represents an alternative to bottled oxygen in remote places and a valuable support of other treatments because of its rapid action. If dexamethasone and a hyperbaric bag are available both methods may be used for immediate as well as prolonged relief of acute mountain sickness. Finally, however, it has to be emphasised that this dangerous and unpleasant condition should be avoided by slow ascent and that immediate descent or evacuation remains the ultimate treatment of choice. The objective of any other

therapeutic measure should be to facilitate safe descent.

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Unsuspected HIV infection presenting in first year of life

J A Evans, S C Marriage, M D S Walters, M Levin

Department of Paediatrics,
St Mary's Hospital Medical
School, London W2 1PG
J A Evans, lecturer
S C Marriage, lecturer
M D S Walters, senior lecturer
M Levin, professor

Correspondence to:
Dr Evans.

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Anonymous unlinked screening programmes in inner London have shown that up to 1 in 200 women booked at antenatal clinics is HIV positive. Most of these women, however, do not have a named HIV test during pregnancy and therefore remain unaware of their infection. Failure to identify these women not only results in the baby being denied adequate medical care but also prevents the use of measures that may reduce transmission of infection from mother to child.

Less than one fifth of pregnant women infected with HIV are being recognised. During 1992-3 anonymous testing of blood samples from newborn babies in

three Thames regions identified 262 HIV seropositive infants, only 15% of whom were born to women known to be infected with HIV before delivery.¹

Subjects, methods, and results

During 1992-3 five infants who were previously not known to be at risk of HIV infection were referred to our paediatric HIV unit with *Pneumocystis carinii* pneumonia (table). The pneumonia was the first sign of HIV infection in the family. Four of the children required ventilation, and one died of the pneumonia. Four children had had non-specific symptoms, including cough, diarrhoea, and poor weight gain, for up to six weeks before diagnosis.

Comment

All five patients presented with a life threatening complication of HIV infection as the first sign of the

	Case 1	Case 2	Case 3	Case 4	Case 5
Sex	Female	Male	Male	Male	Male
Gestation (weeks)	38	36	40	39	40
Mode of delivery	Normal	Emergency caesarean section	Normal	Emergency caesarean section	Normal
Ethnic or country origin	South East Asian/white	White	Ugandan	Zimbabwean	Ugandan
Breast fed	Yes	Yes	Yes	Yes	Yes
Age at diagnosis of HIV (weeks)	12	20	14	16	18
Duration of symptoms before diagnosis (weeks)	2	4	1	4	6
Respiratory support	Intermittent positive pressure ventilation (6 days)	Intermittent positive pressure ventilation (10 days)	Intermittent positive pressure ventilation (24 days)	Intermittent positive pressure ventilation (4 days)	Head box oxygen
Drug treatment	Co-trimoxazole, steroids, pentamidine	Co-trimoxazole, steroids	Co-trimoxazole, steroids, pentamidine, surfactant	Co-trimoxazole, steroids	Co-trimoxazole, steroids
Outcome	Alive and well at 15 months	Alive, HIV encephalopathy at 22 months	Died day 24 of admission	Alive and well at 7 months	Died of B cell lymphoma at 13 months

disease in the family. The families had to cope with the diagnosis of HIV in their child and other family members at a time when the child was critically ill.

A child born to a woman known to be HIV positive is closely followed, and it is likely that the non-specific symptoms shown by these children would have received early appropriate medical intervention. In addition, our unit's policy is to give co-trimoxazole to all infants born to HIV positive women from the age of 3 weeks until their infection status is known. Co-trimoxazole has been found highly effective in preventing *P carinii* pneumonia in children with leukaemia and is also valuable in infants with HIV infection.² Thus the illness may have been prevented if the mothers' HIV status had been known.

Several interventions have been shown to greatly reduce the risk of transmission of HIV from mother to child, which is one of the main aims in the care of families affected by HIV. In the developed world babies born to HIV positive women should be bottle fed as breast feeding significantly increases the risk of transmission.³ A recent study in the United States showed that giving zidovudine to HIV positive pregnant women and then to the baby for six weeks after delivery significantly reduces the transmission rate of HIV,⁴ and evidence is accumulat-

ing that caesarean section may also be protective.⁵

The reduced risk of vertical transmission, better health care of the baby and mother, and families being able to discover the HIV infection before illness develops are compelling arguments for identifying HIV infected women antenatally. The absence of an effective screening programme in Britain is denying HIV positive families simple interventions that would prevent some infants being infected and reduce the risk of life threatening complications in those that do become infected. We believe that there is an urgent need to revise the current HIV testing policy in pregnant women in areas where anonymous testing shows a high prevalence.

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ABC of multiple authorship

From time to time someone's name appears at the head of a research paper to which they have had not the slightest input.¹ There are many possible reasons for this. Perhaps the authors are members of a publication syndicate; or the accessory author is being complimented, or bribed; or the professor has exercised the modern day equivalent of *droit de seigneur*. One case is unique, however. It is widely known to those in the field and equally widely forgiven. To describe it adequately I must first introduce three physicists.

Hans Bethe was born in Strasbourg in 1906 when the town was part of Germany. He fled from the Nazis in 1935 and joined the staff of Cornell University. He became a major figure in nuclear physics during the 1930s and 1940s. In 1938 he worked out the details of the nuclear fusion reactions which power the stars, for which he subsequently received a Nobel prize. He was rumoured to have performed the necessary calculations on the back of an envelope during a boring train journey from Washington to New York.

George Gamow was born in Odessa in 1904. He learnt his physics in Europe under Bohr and Rutherford, and emigrated to the United States in 1934 to take up a post at the George Washington University, Washington DC. He made extensive contributions to nuclear physics, and in 1954 was the first person to suggest that the genetic code consisted of triplets of nucleotides. He was an ebullient, larger than life character, who was known for his sense of humour and practical jokes. He published (and illustrated) two books concerning the misadventures of a character

called Mr Tompkins, in which he described relativity and quantum mechanics for a lay readership. He and Bethe were good friends: it was a conference that Gamow organised in Washington which inspired Bethe to begin work on the nuclear physics of stars. It was Gamow, too, who originated the tale that Bethe had worked out all the details on the train journey home.

Ralph Alpher was a graduate student, who was working towards his PhD under Gamow's supervision in the late 1940s. Gamow had realised that during the first few hundred seconds of the big bang matter would be sufficiently hot and densely packed that nuclear fusion reactions would take place. Alpher's job was to work out the details of this, drawing on Bethe's earlier work concerning fusion in stars.

Alpher's PhD thesis was submitted early in 1948. At the same time he and Gamow decided to send a letter to *Physical Review* to announce their findings to a wider public. Alpher was baffled to find his supervisor intended to add Bethe's name to the author list. Bethe, after all, had contributed nothing to the paper that merited more than a mention among the references.

To Gamow's delight their letter was published on 1 April: Alpher RA, Bethe H, Gamow G. *Physical Review* 1948;73(7):803-4.

Hans Bethe is probably the only person ever to be credited with authorship solely for the sake of a pun on the Greek alphabet.—GRANT L HUTCHISON is a consultant anaesthetist in Dundee

1 Smith J. Gift authorship: a poisoned chalice? *BMJ* 1994;309:1456-7.