

In patients with HIV infection, serum tryptophan is also low (Werner *et al*, 1988; Larsson *et al*, 1989), blood serotonin is very low (Larsson *et al*, 1989) and neopterin and kynurenine levels are elevated (Werner *et al*, 1988). These changes are thought to be due to the induction of indoleamine 2,3-dioxygenase enzyme by cytokines (Werner *et al*, 1989). Further reductions of tryptophan, serotonin and increased kynurenine levels may therefore contribute to explain the exacerbation of symptoms of the eating disorder during the development of HIV disease.

- BLUNDELL, J. E. (1984) Serotonin and appetite. *Neuropharmacology*, **23**, 1537–1551.
- COPPEN, A. J., GUPTA, K., ECCLESTON, E. G., *et al* (1976) Plasma tryptophan in anorexia nervosa. *Lancet*, *i*, 961.
- KAYE, W. H., EBERT, M. H., RALEIGH, M., *et al* (1984) Abnormalities in CNS monoamine metabolism in anorexia nervosa. *Archives of General Psychiatry*, **41**, 350–355.
- LARSSON, M., HAGBERG, L., NORKRANS, G., *et al* (1989) Indoleamine deficiency in blood and cerebrospinal fluid from patients with human immunodeficiency virus infection. *Journal of Neuroscience Research*, **23**, 441–446.
- WERNER, E. R., FUCHS, D., HAUSEN, A., *et al* (1988) Tryptophan degradation in patients infected by human immunodeficiency virus. *Biological Chemistry Hoppe-Seyler*, **369**, 337–340.
- , WERNER-FELMAYER, G., FUCHS, D., *et al* (1989) Parallel induction of tetrahydrobiopterin biosynthesis and indoleamine 2,3-dioxygenase activity in human cells and cell lines by interferon-g. *Biochemical Journal*, **262**, 861–866.

SERDAR M. DURSUN  
SHEILA L. HANDLEY

*Pharmaceutical Sciences Institute  
Aston University  
Aston Triangle  
Birmingham B4 7ET*

#### Suicide prevention

SIR: The west country district mentioned in Professor Morgan's paper (*Journal*, February 1992, **160**, 149–153) was one of three serviced by two mental hospitals which were among the first in the country to close (1986, 1987). We have examined rates of suicide and open verdicts for the three districts between 1983 and 1990. The following figures are expressed as standardised mortality ratios (mortality ratios corrected for age) with 95% lower confidence limits in parentheses. The overall male suicide rate was 140 (127) which, when open verdicts were taken into account, reduced to 116 (106); for females, the respective figures were 130 (112) and 107 (94). Analysis of the rates over time did not reveal any significant differences from the national average.

These figures indicate that the high male suicide rate was present even before the hospital closures, and that the move to community care has had no demonstrable effect on suicide rates.

The author makes useful points about suicide prevention. One of the districts is aiming to reduce the level of attempted suicide by 20% over ten years (Gentle, 1990). Achieving this goal will be beyond the remit of health authorities necessitating changes in not only health but also social, economic, cultural and political areas.

GENTLE, P. H. (1990) *Better Health 1990*. Exeter: Exeter Health Authority.

HARM BOER  
MARTIN BRISCOE

*Wonford House Hospital  
Dryden Road  
Wonford  
Exeter EX2 5AF*

SIR: The whole issue of in-patient suicides is very interesting and very emotive. This was exemplified by the recent study of in-patient schizophrenic suicides (Modestin *et al*, *Journal*, March 1992, **160**, 398–401). The authors cited a number of studies indicating the importance of schizophrenia for in-patient suicides. In a study of violent behaviour, over 15 months, our group (James *et al*, 1990) observed 14 episodes of attempted suicide among in-patients in our locked ward, all by schizophrenics ( $\chi^2 = 9.48$ ,  $P < 0.005$ ). Despite the supportive and supervised environment of the ward, schizophrenics are vulnerable to attempted suicides or suicides, suggesting such acts are difficult to predict among this group.

JAMES, D. V., FINEBERG, N. A. SHAH, A. K. *et al* (1990) An increase in violence on an acute psychiatric ward: a study of associated factors. *British Journal of Psychiatry*, **156**, 846–852.

A. K. SHAH

*Section of Epidemiology and General Practice  
Institute of Psychiatry  
De Crespigny Park  
Denmark Hill  
London SE5 8AF*

SIR: Professor Morgan's report (*Journal*, February 1992, **160**, 149–153) provoked the following thoughts.

We psychiatrists know about the number of suicides we could not prevent. But do we have any information about the number of suicides we have probably averted? How reliable are our suicide predictions? How many of those whom we consider highly suicidal would commit suicide if not intervened?

Have the suicide rates fallen with the advances in psychiatric diagnosis and treatment? Have we

actually prevented a significant number of suicides or have we just postponed them? Do we at times facilitate suicides in potential patients, for example, by prescribing antidepressants?

Psychiatrists and the rest of the society would be better off if we could confess our helplessness in averting suicides and declare the fact that at the best we might be able to postpone some and only sometimes prevent them.

ALBERT MICHAEL  
ANIL P. JOSEPH  
ALPHIE PALLEN

*St Fintan's Hospital  
Portlaoise  
Co. Laois  
Republic of Ireland*

#### Neuroleptic malignant syndrome

SIR: Those who would classify neuroleptic malignant syndrome (NMS) with malignant hyperthermia (MH) and exertional heatstroke (EHS), as differing manifestations of a common thermic stress syndrome with differing trigger factors but shared pathophysiology at a biochemical level, will be disappointed by the report of Rosebush *et al* (*Journal*, November 1991, 159, 709–712) finding no useful role for dantrolene in the treatment of NMS: dantrolene is the drug of choice in the treatment and prophylaxis of MH and there is some evidence for its efficacy in EHS (Larner, 1992). However, previous reports have acknowledged that the benefits of dantrolene in NMS are at best partial and less consistent than in MH, and the possibility that NMS results, at least in part, from a disorder of muscle-cell calcium homeostasis still remains.

The fullest account of post-mortem muscle pathology in NMS reported a toxic myopathy similar to that seen in MH in the absence of major brain abnormalities, supporting a peripheral mechanism for the hyperpyrexia of NMS (Jones & Dawson, 1989). Furthermore, it has been known for some years that NMS muscle *in vitro* responds to halothane (but not caffeine) with a contracture, as does MH muscle, suggesting a link between the conditions at the pathophysiological level (Caroff *et al*, 1983).

To further elucidate potential similarities in the biochemical mechanisms underlying NMS, MH, and EHS, it would be useful to determine the response of NMS muscle to ryanodine *in vitro*. Ryanodine binds specifically and avidly to the calcium release channel of muscle sarcoplasmic reticulum, the proposed site of the MH defect (Mickelson *et al*, 1988), and ryanodine contracture may therefore be a more specific test for MH (Hopkins *et al*, 1991) and

hence for a deregulation of muscle-cell calcium homeostasis.

- CAROFF, S., ROSENBERG, H. & GERBER, J. C. (1983) Neuroleptic malignant syndrome and malignant hyperthermia. *Lancet*, *i*, 244.  
HOPKINS, P. M., ELLIS, F. R. & HALSALL, P. J. (1991) Ryanodine contracture: a potentially specific *in vitro* diagnostic test for malignant hyperthermia. *British Journal of Anaesthesia*, *66*, 611–613.  
JONES, E. M. & DAWSON, A. (1989) Neuroleptic malignant syndrome: a case report with post-mortem brain and muscle pathology. *Journal of Neurology, Neurosurgery and Psychiatry*, *52*, 1006–1009.  
LARNER, A. J. (1992) Dantrolene for exertional heatstroke. *Lancet*, *339*, 182.  
MICKELSON, J. R., GALLANT, E. M., LITTERER, L. A., *et al* (1988) Abnormal sarcoplasmic reticulum ryanodine receptor in malignant hyperthermia. *Journal of Biological Chemistry*, *263*, 9310–9315.

ANDREW J. LARNER

*The Midland Centre for Neurosurgery & Neurology  
Holly Lane  
Smethwick  
Warley  
West Midlands B67 7JX*

SIR: Spivak *et al* (*Journal*, March 1992, 160, 412–414) report hallucinations induced by physical and psychological stress in three young soldiers and quote the pertinent literature from 1960 onwards. I would like to remind of a similar, but more complex phenomenon observed in the soldier Socrates during the Peloponnesian war (ca. 431 to 404 BC) and reported by Alcibiades (Plato, *The Dinner Party*):

“At daybreak he became thoughtful. He stood in the same place just thinking, and kept on at it without any sign of giving up. When noon came the men became interested and said to each other ‘look, Socrates has been standing there thinking since daybreak’. Later some of the Ionians brought out their bedding after supper – it was in summer time – and slept out in the cool air. They watched him to see whether he would stand there all night. He did! He stood quite still until the sun rose and the dawn came. . . .”

Later, Socrates explained (Plato, *Socrates' Defense*):

“I have a strange experience. Previously the divine voice which I have become used to, has always stayed with me. It has opposed me even in quite unimportant matters if I was about to take the wrong action. . . . At other occasions it has even stopped me in the middle of a sentence.”

I suggest that the term Socrates' symptom should be used for the combination of auditory hallucinations and cataplexia-like symptoms occurring under