factors significantly predicted postnatal depression—namely, a low family income and lack of a confidant. There was no interaction between these two factors in their effect. The logistic regression of probability (case)/probability (non-case) on income and the presence of a confidant showed a good fit with an additive model, the mean (SE) estimates for their effects being 1.16 (0.45) and 1.80 (0.59) respectively. This means that, compared with a higher income, a low income increased the odds of developing depression after childbirth by a factor of about 3.2 (95% confidence interval 1.3 to 7.6); and, independently, compared with having a confidant, not having one increased the risk of developing depression by a factor of about 6.1 (95% confidence interval 1.9 to 19.3). Thus having a low income and no confidant increased the odds of postnatal depression by a factor of more than 19.

Comment

Our results suggest that poverty and lack of a confiding relationship are important independent risk factors for the development of postnatal depression

and that perinatal complications are not. Health care professionals, particularly general practitioners, health visitors, and midwives, need to be aware of the risk of postnatal depression among women in such socially adverse circumstances.

We thank all the women who participated in the study; Alison Bond, Dr Helen Kennerley, Pavlos Anastasiades, and Carolyn Fordham for their help; and Professor M G Gelder and Dr D Gath for their support. We are also grateful for the help of the staff of the Oxford obstetric data system, particularly Pat Yudkin. The research was supported by grants from the Mental Health Foundation and Oxford Regional Health Authority.

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(Accepted 3 February 1989)

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Br Med J 1989;298:1074-5

Effect of zidovudine on platelet count

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One of the short term effects of zidovudine (3'-azido-3'-deoxythymidine, AZT) is a rise in the platelet count in thrombocytopenia related to HIV infection.^{1,2} The long term effects on platelets have not been reported, and doctors have been reluctant to use zidovudine in the presence of severe thrombocytopenia because of its association with myelosuppression. We report our experience of up to 36 weeks of treatment with zidovudine in both patients with thrombocytopenia and those with normal platelet counts.

Patients, methods, and results

Thirty eight patients, 14 with AIDS and 24 with symptomatic HIV infection, were treated with zidovudine for over 12 weeks. Platelet counts were

estimated with a Coulter counter (S PLUS IV), the normal reference range being $150-450 \times 10^9/l$, and results were available up to 36 weeks for 23 patients. Before treatment 12 patients (10 intravenous drug misusers, one homosexual, and one recipient of blood products) had platelet counts that were persistently below normal (mean count $91.5 \times 10^9/l$, 95% confidence interval 49 to $134 \times 10^9/l$). In two patients with symptoms of spontaneous bruising the initial counts were less than $15 \times 10^9/l$. Twenty six patients had normal counts before treatment (mean $241 \times 10^9/l$, 211 to $271 \times 10^9/l$).

Platelet counts rose in both groups over the first eight weeks (mean rise from value before treatment $64 \times 10^9/l$). Among the group with a normal platelet count before treatment, however, the count fell gradually after eight weeks to a value below that recorded initially. Counts were better maintained among the patients with thrombocytopenia (figure), and there was a significant association between an eventual rise in platelet count and an initial count below normal (nine out of 12 patients, $p < 0.05$, χ^2 test with Yates's correction). The two patients with severe thrombocytopenia had platelet counts of $119 \times 10^9/l$ and $102 \times 10^9/l$ after 32 and 16 weeks' treatment respectively.

To assess which factors determined whether the platelet count fell eventually variables were studied before and during treatment. An eventual fall in platelet count was associated with the development of severe anaemia (haemoglobin concentration < 80 g/l) that necessitated blood transfusion (five patients, $p < 0.05$) but not with other markers of possible myelosuppression such as neutropenia and lymphopenia, or with risk group, clinical state, and occurrence or treatment of opportunistic infections. Severe anaemia developed only in patients who had normal platelet counts initially.

Comment

An immune thrombocytopenia related to HIV infection results from the reticuloendothelial removal from the circulation of platelets coated with immunoglobulin, but other causes of a fall in platelet count in HIV infection include clinical progression to AIDS, recovery from *Pneumocystis carinii* pneumonia,³ and myelosuppression from drugs, or antibodies to glyco-

Mean platelet counts and 95% confidence intervals in patients with (○) and without (●) thrombocytopenia taking zidovudine

protein (gp120) in the viral envelope.⁴ During the first few weeks of treatment with zidovudine platelet counts rose in both patients with thrombocytopenia and those with normal counts. This suggests that reticuloendothelial inhibition may not be the only mechanism.

The eventual fall in platelet count with longer treatment probably had several causes, but the only significant association in our patients was with the development of probable myelotoxicity due to zidovudine, suggesting that this was the cause. We found no easily identifiable variables before treatment, other than a low platelet count, that predicted a good eventual response.

Current treatments for thrombocytopenia related to HIV infection have potential disadvantages—namely, immunosuppression from steroids and splenectomy with consequent risk of progression of the disease, problems of availability of high dose immunoglobulins, and lack of access to veins, especially in intravenous drug users. Zidovudine may be a useful

alternative for symptomatic thrombocytopenia. The good response among those with even severe thrombocytopenia shows that this should not be considered a contraindication to treatment.

We acknowledge Lothian Health Board, the American Foundation for AIDS Research for financial support (PJF), and our colleagues Drs J A Gray and P D Welsby for access to results in their patients.

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(Accepted 20 January 1989).

Persistent increase in caffeine concentrations in people who stop smoking

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Br Med J 1989;298:1075-6

Mean (SD) caffeine consumption and plasma caffeine and cotinine concentrations in subjects who had stopped smoking for 12 and 26 weeks and in those who continued smoking.

Cigarette smokers on average drink more coffee than non-smokers and can metabolise caffeine much more rapidly.^{1,2} One possible explanation for their increased consumption is that smokers need to drink more coffee to achieve the desired concentrations of caffeine in the body and hence the desired effects. When smokers stop smoking the rate at which caffeine is metabolised declines. If consumption of caffeine remains the same concentrations of caffeine in the body should rise. Persistent increases in caffeine concentrations may cause concern in view of recent data showing an increased risk of coronary heart disease in and low birth weight of children of heavy coffee drinkers.^{3,4}

We studied plasma caffeine concentrations and caffeine consumption before and for six months after subjects gave up smoking.

Subjects, methods, and results

Ninety five healthy subjects were recruited for a stop smoking programme.⁵ The subjects' average age was 38 (range 19-60); 38 were men, 87 were white, and almost all were middle or working class. Subjects were

assessed before entry to the programme and 12 and 26 weeks afterwards. Assessment included analysis of plasma samples for cotinine (a primary metabolite of nicotine used to indicate nicotine intake) and caffeine concentrations, body weight, and a three day record of weighed food intake.

Sixty eight subjects completed the study. Data were available on 64 subjects at 12 weeks and 61 subjects at 26 weeks. The subjects who subsequently continued smoking were significantly older (mean 42.8 v 36.2 years) but cigarette consumption, numbers of years of smoking, and plasma cotinine and caffeine concentrations were not significantly different between those who gave up and those who continued smoking. At 12 and 26 weeks plasma caffeine concentrations in subjects who stopped smoking were more than double the baseline value (table). Caffeine concentrations in smokers changed little throughout the study. Subjects who stopped smoking had significantly decreased their caffeine consumption at 26 weeks.

Comment

Our study confirms the hypotheses that plasma caffeine concentrations increase after people give up smoking and remain increased for at least six months. This increase was substantial, averaging more than 250%. In subjects who continued to smoke caffeine concentrations were unchanged, as expected.

The average caffeine concentration in the body is determined by the consumption and rate of metabolism of caffeine. Consumption was either unchanged (at 12 weeks) or decreased (at 26 weeks) in subjects who stopped smoking. Thus the increased caffeine concentrations were the result of slowed metabolism due to abstinence from tobacco. Caffeine consumption was significantly decreased at 26 weeks, which is consistent with a degree of self regulation of caffeine concentrations. Regulation of caffeine concentrations could explain why cigarette smokers drink more coffee. As they metabolise caffeine more quickly, the half life of caffeine is shorter and the desired effects of the caffeine disappear or symptoms of withdrawal appear more quickly. Smokers would need to drink coffee more frequently to maintain caffeine concentrations similar to those in non-smokers. The rate of metabolism of caffeine decreases within three or four days after a subject stops smoking. Assuming that consumption of caffeine is unchanged, high caffeine concentrations could contribute to the tobacco withdrawal syndrome.

An increase of 250% in caffeine concentrations is

	Values according to:			
	Smoking state at 12 weeks		Smoking state at 26 weeks	
	Baseline	At 12 weeks	Baseline	At 26 weeks
No of subjects:				
Former smokers		34		24
Smokers		30		37
Plasma caffeine (μmol/l)†:				
Former smokers	6.64 (7.41)	17.89 (20.65)*	7.33 (8.39)	19.54 (16.06)*
Smokers	7.69 (10.06)	9.39 (8.74)	7.14 (9.12)	7.05 (6.74)
Caffeine consumption (mg/kg/day):				
Former smokers	2.05 (1.66)	1.94 (1.68)	2.14 (1.55)	1.62 (1.11)*
Smokers	1.44 (1.22)	1.04 (0.68)	1.36 (1.14)	1.52 (1.31)
Plasma cotinine (μmol/l)†:				
Former smokers	1.35 (0.61)	0.01 (0.03)*	1.25 (0.48)	0 (0.01)*
Smokers	1.66 (0.66)	1.03 (0.84)*	1.55 (0.60)	1.25 (0.78)*

*Comparison of baseline value v 12 or 26 weeks, p<0.05 (2×2 repeated measures analysis of variance).
†Samples collected between 1600 and 2000.