

## Comment

The normal secretion of growth hormone is inhibited by somatostatin and stimulated by growth hormone releasing factor. The same effects are also evident in most patients with acromegaly. Release of somatostatin may be stimulated and release of growth hormone releasing factor inhibited by reduced hypothalamic dopamine content, which in turn may be caused by chronic hyperprolactinaemia.<sup>5</sup>

The hyperprolactinaemia in our patient may thus have led to increased release of somatostatin and decreased release of growth hormone releasing factor, reflected by the "low" growth hormone concentrations despite this patient's longstanding, clinically active acromegaly. Treatment with a dopamine agonist inhibited prolactin secretion, which was followed by increased hypothalamic dopamine content. Release of somatostatin might then have been reduced and release of growth hormone releasing factor increased, leading to the rapid increase in growth hormone concentrations and the enlargement of the pituitary tumour.

1 Wass JAH, Thorner MO, Morris DV, *et al.* Long term treatment of acromegaly with bromocriptine. *Br Med J* 1977;i:875-8.

2 Pelkonen R, Ylikahri R, Karonen S-L. Bromocriptine treatment of patients with acromegaly resistant to conventional therapy. *Clin Endocrinol (Oxf)* 1980;12:219-24.

3 Lambert SWJ, Liuzzi A, Clodini PG, *et al.* The value of plasma prolactin levels in the prediction of the responsiveness of growth hormone secretion to bromocriptine and TRH in acromegaly. *Eur J Clin Invest* 1982;12:151-5.

4 Besser GM. Pathology of acromegaly. In: Molinatti GM, Martini L, eds. *International Congress Endocrinology, Italy '85, Torino, 5-8 June 1985*. Amsterdam: Elsevier Press, 1986.

5 Sarkar DK, Gottschall PE, Meitas J. Decline of tuberoinfundibular dopaminergic function resulting from chronic hyperprolactinemia in rats. *Endocrinology* 1984;115:1269-74.

(Accepted 20 November 1986)

Department of Endocrinology, Karolinska Hospital, S-104 04 Stockholm, Sweden

KATARINA HEIDVALL, MD, research fellow

ANNA-LENA HULTING, MD, PHD, specialist in endocrinology

Correspondence to: Dr Hulting.

## Hepatitis B: risk to expatriates in South East Asia

We assessed the prevalence of markers of hepatitis B virus in all white expatriate staff and their families attending routine physical examinations during one year.

### Subjects, methods, and results

We included 234 subjects in the trial: 117 were resident in Thailand, 98 in Indonesia, and 19 in the Philippines. Radioimmunoassay (Ausria 11, Corab, and Ausab-RIA; Abbott) or enzyme immunoassay (Auszyme, Corzyme, and Ausab-EIA; Abbott) was used to test for the presence of hepatitis B surface antigen, antibody to hepatitis B core antigen, and antibody to hepatitis B surface antigen. Testing for hepatitis B virus had not been done before the staff went to South East Asia, but the prevalence of markers of hepatitis B virus in similar low risk groups is only 3-5%.<sup>1</sup> Activities of alanine aminotransferase, aspartate aminotransferase, and  $\gamma$ -glutamyltransferase were measured at each examination.

The table shows that a significantly greater proportion of married men were positive for hepatitis B virus compared with married women and dependants. The men were divided into groups according to their length of stay in South East

Asia. The proportion of married men who were seropositive was: among those who were in the first year of their stay 0% (0/11), second year 9% (2/22), third 18% (6/34), fourth 16% (3/19), fifth 47% (9/19), and sixth or more 43% (12/28) ( $p=0.0001$ ). A higher proportion of single men were seropositive after a fairly short time in the area, but there was no consistent trend with length of stay.

Among married men in their 30s, 40s, and 50s the proportion positive for hepatitis B virus was 18% (9/50), 39% (17/44), and 21% (5/24), respectively. Eleven out of 21 (52%) who were in their 40s and had been in the area for five or more years were seropositive. Among married office employees 10% (8/82) were positive for hepatitis B virus, compared with 47% (24/51) of married field employees ( $p=0.001$ ). Among single male office employees 29% (5/17) were positive for hepatitis B virus, compared with 40% (4/10) of single field employees.

We took a result 25% above the laboratory upper limit of normal as an arbitrary definition of raised enzyme activity: 13% (6/46) of those who were positive for hepatitis B virus and 6% (12/188) of those who were negative had raised activities of one or more of the enzymes tested ( $p=0.132$ ) and 9% (4/46) of those positive compared with 2% (4/188) of those negative had raised activities of two or more of the enzymes ( $p=0.050$ ). Though we cannot conclude that these differences were caused by hepatitis B virus infection, the low prevalence of raised enzyme activities among those who were positive for hepatitis B virus is consistent with mild infection. Only eight (17%) of those with markers of hepatitis B virus gave a history of jaundice.

## Comment

Among the four groups shown in the table the two at greatest risk of acquiring hepatitis B virus infection are single and married men. Blood transfusions, dental treatment, and acupuncture would be expected to cause equal distribution of markers of infection among the four groups. No employees had looked after patients, there was no evidence of drug abuse, and tattooing was rare. Mosquitoes have never been shown to be a realistic means of transmission.<sup>2</sup> Homosexual transmission is unlikely to occur to such a high extent among married men. With an estimated 10-20% of the general population of South East Asia being healthy carriers of hepatitis B surface antigen<sup>3</sup> it is reasonable to conclude that the high risk employees had been exposed to hepatitis B virus by sexual contact with the local population.

The company now complies with recommendations of the Centers for Disease Control by giving hepatitis B immunisation to all non-immune expatriate adults planning to live in South East Asia for more than six months.<sup>1</sup>

We thank Professor Zuckerman for his guidance in the preparation of this paper; Sister Margaret Fox for her help in collating the data; and Eileen Woodcock, Bill Moore, and Neil Scott for their help with typing and the computer program.

1 Anonymous. Recommendations for protection against viral hepatitis. *MMWR* 1985;34:313-35.

2 Byrom NA, Davidson CC, Draper CC, Zuckerman AJ. Role of mosquitoes in transmission of hepatitis B antigen. *J Infect Dis* 1973;128:259-60.

3 Tong MJ, Sun SC, Schaefer BT, Chang NK, Lo KJ, Peters RL. Hepatitis-associated antigen and hepatocellular carcinoma in Taiwan. *Ann Intern Med* 1971;75:687-91.

(Accepted 20 October 1986)

Medical Department, Unocal UK Limited, Sunbury on Thames, Middlesex TW16 7LU

DONALD G DAWSON, MB, DOBSTRCOG, manager, international medicine

Medical Department, Unocal Corporation, Los Angeles, CA 90017, USA

GARY H SPIVEY, MD, MPH, manager, environmental medicine and epidemiology

JAMES J KORELITZ, PHD, epidemiologist

REYNOLD T SCHMIDT, MD, corporate medical director

Correspondence to: Dr Dawson.

### Prevalence of markers of hepatitis B virus among 234 subjects studied

Presence or absence of marker				Married men (n=133)	Married women (n=50)	Single men (n=27)	Dependants less than 18 years (n=24)
Hepatitis B surface antigen	Antibody to hepatitis B core antigen	Antibody to hepatitis B surface antigen					
+	-	-		2			
+	+	-		3	1	2	
-	+	-		24	3	6	
-	-	+		3	1	1	
Total No (%) positive				32 (24)	5 (10)	9 (33)	0
p*					0.039	0.338	0.005

\*Fisher's exact test for independence for 2x2 table. Each category is compared with married men. Outcome variable is either negative for hepatitis B virus (if all three tests give negative results) or positive.