

BRIEF COMMUNICATION

## Serum Hepatitis: Are Surgeons and Obstetricians Putting Themselves at Risk?

MOHAMED FAROUK ALLAM<sup>1</sup>, MOHAMED AHMED HELMY<sup>2</sup> & ROSARIO ANGULO LUCENA<sup>1</sup>

<sup>1</sup>*Preventive Medicine and Public Health Department, Faculty of Medicine, University of Cordoba, Cordoba, Spain and* <sup>2</sup>*General Surgery Department, Faculty of Medicine, Ain Shams University, Cairo, Egypt*

**KEYWORDS** *Biological work hazard, health care workers, hepatitis B, hepatitis C.*

Many previous studies have shown that health care workers (HCWs), especially surgeons, have a higher prevalence of hepatitis B markers, and a higher risk of acquiring hepatitis than the general population does (Liewellyn & Harvey, 1994; American College of Surgeons, 1995). In addition, the prevalence of serologic markers of post-hepatitis B virus infection increases with years of practice, with likelihood of exposure to patients' blood or body secretions (Nelsing *et al.*, 1997).

The perception of surgical staff to that risk and the importance of hepatitis B vaccine is variable. Several studies have demonstrated that only a minority of doctors regularly use protective measures, although they were readily available (Smith *et al.*, 1996). To determine the different attitudes and beliefs of HCWs towards the risk of serum hepatitis infection appropriately formulated questionnaires should be distributed to them (Costa *et al.*, 1997).

The aim of this study was to measure the attitudes, beliefs and practices of surgeons and obstetricians of Ain Shams University Hospital towards the precautionary lines against serum hepatitis infection, and to estimate coverage of hepatitis B vaccination among them. Ain Shams University Hospital is a 2000 bed teaching hospital in Cairo, Egypt. It includes two main hospitals; El Demerdash General Hospital and Ain Shams University Specialised Hospital. Due to its location in the middle of Cairo, it serves over five million persons. This hospital is a tertiary referral trauma centre, fully equipped to receive trauma patients. Three hundred and fifty surgeons and obstetricians from Ain

Author for correspondence: Mohamed Farouk Allam, Department of Preventive Medicine and Public Health, Faculty of Medicine, University of Cordoba, Avda. Menéndez Pidal. s/n 14004 Cordoba, Spain. Tel: +(34) 957 218 278. Fax: +(34) 957 218 573. E-mail: fm2faahm@uco.es

Shams University Hospital were randomly selected for our study, with response rate of 88.6%. The responded physicians included 211 (68.1%) surgeons and 99 (31.9%) obstetricians. Nine well-trained physicians interviewed the studied surgeons and obstetricians over a course of 6 months. A 17-item questionnaire was used which has been previously validated by Costa *et al.* (1997). The questionnaire was translated into Arabic and modified according to the Egyptian culture after a pilot study.

Univariate analysis was conducted using the student's *t*-test for continuous variables and Pearson's Chi square test for categorical variables, to describe the distribution of outcome variable. All statistical analyses were performed using the Statistical Package for Social Science version 9.

The mean age of our random sample was  $33.6 \pm 7.8$  years and of them only 19 (6.1%) were women. Age and gender stratifications by speciality showed no significant difference. Of the 310 interviewed physicians 76.5% and 56.5% reported hand wash before and after examining the patients and wearing thick gloves before examining the patients respectively. Comparison between surgeons and obstetricians regarding hand wash before and after examining the patients did not show any significant difference, meanwhile obstetricians considered more the precautionary protective measure of wearing thick gloves on examining their patients ( $p < 0.001$ ). Physicians who adhered to these simple prophylactic measures were older than those who did not ( $p < 0.001$ ), indicating positive association between beliefs towards occupational health hazards and years of practice.

Only 62.3% of the included physicians avoided recapping the syringes after their usage, although they recognized the high risk of needle prick infection. Our study surgeons avoided this dangerous process more significantly than the obstetricians ( $p = 0.02$ ). One hundred and thirty-seven (44.2%) physicians reported being vaccinated against hepatitis B, and of them 67.9% received three complete vaccination doses, with an insignificant difference between surgeons and obstetricians. Of 173 unvaccinated physicians 62.4% reported being unconvinced by the importance of hepatitis B vaccination.

Only six physicians reported previous serum hepatitis infection, of these five had hepatitis B and one hepatitis C.

Of the participating physicians 70.3% did not report any serological check-up for serum hepatitis infection, meanwhile only 1.6% reported regular serological check-up every 6 months.

The results of this study show that the practice of the physicians to protect themselves against serum hepatitis infection is deficient, in spite of the background knowledge they should have about the modes of infection and prophylactic measures. This finding is in concordance with similar previous studies.

Becker *et al.* (1990) reported that the rate of syringe recapping in four large medical centres was greater than 25% during all measurement periods and higher than 50% in some instances.

In 1999, it was estimated that, although the voluntary vaccination system has been operating for 10 years, one-third to half of the Dutch surgeons had not been vaccinated. It was predicted that 0.5 – 1% of them may carry hepatitis B virus (Sheldon, 1999).

Similarly, in a tertiary hospital in Copenhagen, a low attendance at a vaccination campaign against hepatitis B was observed. Reasons for not being vaccinated were: afraid of secondary effects, doubt about the security of the vaccine, did not receive any offer of vaccination, low risk of blood exposure and had not thought about it (Jespen & Thomsen, 1994).

Fortunately, only 6 (1.9%) of our interviewed physicians had a past history of serum hepatitis; low rate that does not coincide with the deficient practice of the universal precautions.

In Glasgow, Thorburn and his colleagues (2001) estimated hepatitis C prevalence in HCWs. The authors assuming that all detected infections had been occupationally acquired, the maximum estimated risk of hepatitis C infection in exposure prone medical staff was 1.4% for surgeons and 1.0% for physicians over a 35 year professional career.

Of course, we should remember that about 70% of our surgeons and obstetricians did not report any serological check up, and it is possible to find more asymptomatic cases on testing this high-risk group medical staff.

Although Hepatitis B and C are well-known important health hazards to both HCWs and the patients they treat, testing of surgeons for hepatitis C in UK was refused by the Department of Health because the advisory committee on hepatitis believe that the risk appears to be low and the costs might not be justifiable. Similarly, the USA does not recommend routine testing of HCWs for hepatitis C virus, saying that the prevalence of infection in HCWs is no higher than in general population (Brown, 1999).

In conclusion, instructions and information against blood exposure and serum hepatitis need to be repeated over and over again. All doctors, especially surgeons and obstetricians, ought to be vaccinated against hepatitis B.

## References

- AMERICAN COLLEGE OF SURGEONS (1995). Statement on the surgeon and hepatitis B infection. *Bulletin of American College of Surgeons*, 80, 33–35.
- BECKER, M.H., JANZ, N.K. & BAND, J. (1990). Non-compliance with universal precautions policy: Why do physicians and nurses recap needles? *American Journal of Infection Control*, 30, 555–561.
- BROWN, P. (1999). Surgeon infects patient with hepatitis C. *British Medical Journal*, 319, 1219.
- COSTA, J.M., PASQUALOTTO, A.C., SEGAT, F.M., DOS SANTOS, R.P., GUILLANDE, S. & COPETTE, F.R. (1997). Hepatitis B vaccination of health care workers is not yet a reality. *Brazilian Journal of Infectious Diseases*, 1, 248–255.

- JESPEN, L.S. & THOMSEN, A.C. (1994). Attitude of Hospital Personnel to the Risk of Hepatitis B vaccination. A Questionnaire study. *Geskr Laeger*, 156, 5514–5518.
- LIEWELLYN, L.J. & HARVEY, I. (1994). Hepatitis B vaccination: how many doctors are fully covered? *Journal of Public Health Medicine*, 16, 352–356.
- NELSING, S., NIELSEN, T.L. & BRONNUM-HANSEN, H. (1997). Occupational blood exposure among Danish physicians – incidence and risk factors. *Ugeskr Laeger*, 159, 6216–6221.
- SHELDON, T. (1999). Dutch consider obligatory testing of surgeons for hepatitis B. *British Medical Journal*, 319, 1219.
- SMITH, E.R., BANATVALA, J.E. & TILZEY, A.J. (1996). Hepatitis B vaccination uptake among surgeons at a London teaching hospital: how well are we doing? *Annals of Royal College of England*, 78, 447–449.
- THORBURN, D., DUNDAS, D. & MCCRUDEN, E.A. (2001). A study of hepatitis C prevalence in healthcare workers in the West of Scotland. *Gut*, 48, 116–120.