HEPATITIS B AND DENTAL PATIENTS

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SYNOPSIS

Health care personnel especially surgeons and dental surgeons who frequently come in contact with blood and saliva run the risk of contracting hepatitis B. It is not possible to screen all patients who attend the clinics for treatment. The dental patients include a definite proportion of asymptomatic carriers of hepatitis B surface antigen. This paper attempts to emphasize the need for greater care in sterilization procedures and that the clinical dental procedure should reflect the real threat of hepatitis B transmission from patient to surgeon through saliva and from patient to patient by cross contamination.

INTRODUCTION

Liver infection by hepatitis B virus is considered an occupational hazard for health care personnel. The group of professionals susceptible to the infection includes medical practitioners, dental practitioners, clinical laboratory workers and dental hygenists (1). Degree of exposure to blood or body secretions contaminated with blood determines the possible risk of acquiring the infection (2). This infection is endemic throughout the world especially in institutions with dialysing units, laboratories, wards and in cities with poor socio-economic conditions. Incubation period is about two to six months and the effects range from sub-clinical infectioin without jaundice to fulminating hepatitis, acute hepatic failure and death. Majority of the infections are self limiting from which the patient recovers in a month or two with no detectable sequelae. A small proportion of patients fail to eliminate the offending virus and become victims of chronic infection with the risk of transmission of the infection to close contacts and a possible risk of development of hepatocellular carcinoma.

Available evidence indicates that the viral infection is spread by organisms in the blood of the patient, blood stained saliva and possibly normal saliva (3). Innoculation or accidental abrasion of the skin or mucosa is the major route of spread. In view of the fact that patients in the infective stage may be seen by the practitioners from time to time it is advisable for the medical and dental practitioners to take basic precautions with all patients. The dental surgeon and his staff should know the potential for transmission of hepatitis B in the surgery through the undetected chronic patient who acts as a carrier of the disease. The trained staff must be aware of the extent to which medical history is useful in these cases, the signs and symptoms of the illness and the group of patients which are at a higher risk of developing the disease.

CHRONIC CARRIER STATE

Certain groups of patients especially those who have received blood products and those with immune defects are predisposed to the carrier state and they may remain positive up to twenty five years. Other high risk groups include patients on haemodialysis, health care personnel, male homosexuals and patients with some chronic liver diseases. Three different phenomena have to be considered in the study of prevalence of type B hepatitis in medical and dental practice. They are the possible transmission of hepatitis B from patient to health personnel, transmission of the virus from patient to patient in the clinic and the rare risk of transmission from the practitioner to other patients. Another point worthy of consideration is that the extent of direct patient contact appears to be a major factor in the acquisition of hepatitis B infection (4). The incidence of acute state is higher in patient care group compared to personnel not directly involved with patients. It is felt that general dental practitioners have a risk of hepatitis B virus infection about two to three times higher than persons in the non health care professions attributable to occupational exposure. Other data indicate that some dental specialists particularly oral surgeons have an even more increased rate of hepatitis B disease (5).

TRANSMISSION

Hepatitis B virus is commonly transmitted via the parenteral route and it has been shown that a very small amount in blood can be responsible for carrying the infection. Transmission by other body fluids can occur. Infection is usually spread by innoculation of blood products very often during medical or dental treatment. Available experimental and epidemiological evidence point to the existence of non-parenteral mechanism of transmission but the mode of spread and the route of non-parenteral infection remain unknown. Saliva is probably the main vehicle of infection in non-parenterally acquired variety. Transmission may be either airborne through large droplets expelled by sneezing and coughing or directly from mouth to mouth by kissing. Saliva appears to contain hepatitis B virus even in the absence of blood and is at least intermittently positive in most if not all carriers (6). Every patient contact in the dental surgery involves use of sharp instruments in a field contaminated always with saliva and often with blood. The patient attending the Dental Clinic with an attack of subclinical hepatitis cannot be reliably identified from medical history. It is possible that the previous infection was never diagnosed. Studies testing for past hepatitis B infection as evidenced by antibody to hepatitis B surface antigen and a history of hepatitis showed that subclinical infections are more prevalent than clinically apparent cases (7).

METHODS OF CONTROL

A number of procedures can be instituted to minimise the transmission and infection by the hepatitis B virus. Educational programmes regarding the hepatitis hazards for all personnel working in areas of medicine including technicians in laboratories are useful. In surgeries where dental surgeons carry out surgical procedures, it is imperative that all reusable instruments that are used in the mouth be treated by means of procedures that can be relied on to provide complete sterilization. Accepted sterilization methods include autoclaving using steam under pressure which requires about fifteen to thirty minutes of sterilization time and dry heat ovens (160-170 degrees for ninety minutes). Surface disinfection of instruments can be improved by thorough and repeated cleansing with common disinfectants and by the use of stronger germicidal agents such as aldehydes. The use of gloves is an important method for the protection of the practitioners and the patient. In surgeries, use of masks will reduce exposure of personnel to aerosoles in general and appears to be highly desirable. Dental surgeons working in the oral cavity are liable to injuries like minor cuts and abrasions during work and these should be covered with waterproof dressings. In addition, consideration must be given to immunising the staff with vaccination.

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