

ADVISORY GROUP ON HEPATITIS

5 December 1980

Item 4a

Syringe-transmitted hepatitis - Letter from Professor A J Zuckerman to the BMJ 2 September 1978.

Syringe-transmitted hepatitis

SIR,—A recent inquiry from an area health authority addressed to me concerned the risk of hepatitis B and the current practice of performing mass BCG vaccination using the same syringe but with a different hypodermic needle for each person. In my view this method carries a high risk of transmitting viral hepatitis type B¹ and perhaps also the more recently described third form of hepatitis (so called non-A: non-B hepatitis).

The evidence is indisputable. Over 30 years ago hepatitis among patients attending a diabetic clinic was traced to a common syringe which was used for withdrawing blood for blood sugar estimations.² Over two years 63 cases of hepatitis with four deaths occurred in patients attending this clinic. It was considered that infection resulted from contamination of the nozzle of the syringe with blood. It was subsequently shown that removal of a needle from a syringe after completion of an injection can draw blood or tissue fluid in the lumen of the needle back into the syringe nozzle.^{3,4} Other laboratory studies^{5,7} also confirmed this explanation of

outbreaks of hepatitis where the multidose method of syringe loading, but with a change of needle after each injection, was practised. Epidemiological evidence for the transmission of hepatitis B by this method is not lacking. In 1948 23 cases of hepatitis occurred in 110 soldiers inoculated with tetanus toxoid by the multidose-syringe technique.⁸ In another study significantly more cases of jaundice than would be expected were found among Royal Navy personnel who had been inoculated with typhoid-paratyphoid vaccine or tetanus toxoid, or both.⁹ In a more recent retrospective and prospective study of hepatitis in the Royal Air Force it was concluded that about 11% of 895 patients with acute hepatitis contracted the infection through syringe transmission.¹⁰ The multidose-syringe technique was universally practised at the time in the Royal Air Force. Spread of hepatitis B virus is ensured by the reservoir of persistent carriers of this virus in the world, estimated to number between 120 and 175 million. The prevalence of carriers, particularly among blood donors, in North America and in northern Europe is

0.1% or less and in central and eastern Europe up to 5%; the frequency is higher in southern Europe and the countries bordering the Mediterranean, and in some parts of Africa and Asia as many as 20% of the population may be carriers.¹¹ The risk of transmitting hepatitis by the multidose-syringe technique is therefore considerable and it is imperative that an adequately sterilised or a disposable syringe and needle should be used for each individual patient.

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