Control of Infection in Acupuncture

Barry Walsh

Summary
This paper is an update on infections, and potential infections, related to acupuncture, and a brief review of the relevant infection control procedures.

There is no evidence at present to suggest that significant numbers of infections are being transmitted through standard acupuncture treatments in the UK. None the less, good infection control is essential. Like any other science, new research forces infection control to evolve and refine its procedures. Acupuncturists need to constantly review their standards as new viruses and risks are identified.

Keywords
Acupuncture, infection control, hepatitis B virus.

Introduction
Acupuncture has been shown to be a safe procedure provided it is performed by skilled and competent practitioners. Two recent reviews have shown that the risk of problems is extremely low.\textsuperscript{1,2} No infection related complications were reported in these reviews.\textsuperscript{3} Improvements in sterilisation have led to fewer outbreaks of blood borne viruses since the 1980s. Control of infection procedures have continued to be developed and improved in recent years. Cases of serious bacterial infections, such as staphylococcal septicemia and subacute bacterial endocarditis, have been reported in association with acupuncture treatment, but they are rare.\textsuperscript{4,7}

This paper is an update on infections, and potential infections, related to acupuncture, and a brief review of the relevant infection control procedures.

Specific Infections
Hepatitis B
Rampes & James reported a total of 126 cases of hepatitis B related to acupuncture in a review published in 1995.\textsuperscript{6} Outbreaks of hepatitis B virus (HBV) were recorded in 1997, when 36 cases were diagnosed following acupuncture using hollow needles and inadequate sterilisation.\textsuperscript{7} Two outbreaks in Germany, in 1978 (three cases),\textsuperscript{10} and 1976-83 (20 cases),\textsuperscript{11} were the result of inadequate sterilisation. Sixteen patients in Israel contracted HBV as a result of inadequate sterilisation.\textsuperscript{12} In a Rhode Island outbreak 35 patients were HBV positive, following treatment from an acupuncturist who was hepatitis B IgM positive.\textsuperscript{13} In a Florida cluster six cases of HBV were associated with acupuncture performed in a chiropractic clinic. The clinic reused acupuncture needles after immersing them overnight in a 1:750 solution of benzalkonium chloride.\textsuperscript{14}

Between 1985 and 1997 in England and Wales there were five notified cases of acute hepatitis B associated with acupuncture (Ramsey M, personal communication). In 1998 a medical practitioner in North London was responsible for transmitting HBV to 36 patients using auto-haemotherapy (re-injection of own blood) at acupuncture sites.\textsuperscript{16}
Whilst sterile, disposable needles were used for each patient, the same saline bottle was reused, with contaminated needles, to draw fluid for dilution of blood before reinjection.

There are approximately 800 cases of acute hepatitis B infection diagnosed in the UK per annum. This number has fallen since the late 1980s, when there were approximately 1200 cases. In addition to diagnosed acute cases there are an estimated 400 asymptomatic cases of hepatitis B. Approximately 10% of cases become carriers. A small percentage of cases carry the e antigen, and this makes the individuals concerned high risk carriers. It is estimated that there are four million infectious doses of HBV in a drop of blood (Hoffman P, personal communication). Nausea, vomiting, loss of appetite, weight loss and flu like illness are the major presenting symptoms in cases of acute hepatitis B, and jaundice and pruritus are typical presenting signs.

Other Blood Borne Viruses
There have been no cases in the UK of human immunodeficiency virus (HIV) where a causal link with acupuncture has been established. There have been no reported cases of hepatitis C associated with acupuncture, apart from a single case in the auto-haemotherapy outbreak detailed above. Hepatitis C rarely presents with acute jaundice. Most of the estimated 300,000 cases in the UK are asymptomatic. The majority have been associated with drug misuse, via infected needles, in the 1970s and 80s. Eighty percent of HIV infected patients develop chronic hepatitis, often presenting with chronic fatigue syndrome. Some of these may appear in acupuncture clinics, seeking treatment.

Variant Creutzfeldt-Jacob Disease
There is no evidence to link any of the current 100 cases of variant CJD in the UK with acupuncture. Variant CJD due to abnormal prion protein is thought to be associated with consumption of infected UK beef during the 1980s, before meat hygiene regulations were introduced and enforced. Initial symptoms are psychiatric, with depression and anxiety; later symptoms include unsteadiness and hallucinations. In the majority of cases death occurs within 2 years.

Control of Infection Measures
Only single use, disposable acupuncture needles should now be used on patients. The extra cost of needles should be easily offset by the removal of the need to purchase, upgrade and maintain bench top steam sterilisers, and of the time spent sterilising needles. Single use, disposable needles remove the risks of Hepatitis B and C and HIV, not only for patients, but also for the acupuncturist who may contract the infection through needle stick injuries whilst handling needles.

A further reason for single use, disposable needles is to remove the remote risk of vCJD. Sterilisation using an autoclave does not remove the prion protein that causes vCJD. Although no cases of vCJD have been associated with acupuncture, it is prudent for the industry to eliminate this remote risk by using single use, disposable needles.

Used needles should be discarded immediately after use in suitable disposal containers complying with British Standard specifications. Guidance on the law relating to the safe disposal of, and responsibility for, clinical waste may be found in the BMA code of practice.

Disposable plastic introducers reduce the risk of the acupuncture needle grazing the operator’s fingers and therefore may be advantageous in certain circumstances. These introducers should be disposed of between patients.

Occupational Health
Hepatitis B immunisation is advisable for acupuncturists, as they are in contact with blood and body fluids through the use of needles. A course of three injections (at 0, 1, and 6 months) is very effective in protecting against HBV. HBV antibody levels should be measured after the course to ensure seroconversion has occurred. The vaccine is very safe, with minimal side effects; however, redness at the injection site is common. Current advice recommends a booster after 5 years.
where there is an ongoing risk of hepatitis. This advice is under review and is expected to change in the near future.

**Needlestick Injuries**

These can be reduced by ensuring that the storage container is replaced once it is 2/3 full. Latex gloves reduce the risk of infection to the operator, and, if used, should be changed between patients. Needles can penetrate gloves, but the volume of blood entering the skin is reduced by the shearing effect of the glove on the needle.

All needlestick injuries should be dealt with in Accident and Emergency departments. As hepatitis B has an incubation period of between two and six months, un-immunised people can receive post-exposure prophylactic hepatitis B immunisation. In addition, risk assessment for HCV and HIV can be carried out. Counselling is available for Hepatitis C and HIV. Anti-retroviral drugs for HIV may be given in rare circumstances where risk assessment indicates that significant exposure to HIV has occurred.

**Universal Precautions**

Regular handwashing is good practice and one of the main ways of reducing transmission of infections (bacterial, viral and fungal) between patients. Wounds and skin lesions should be covered with waterproof dressings. Protective clothing reduces the spread of infection. Blood spillages should be cleaned promptly, wearing gloves and using household bleach and paper towels. Contaminated items should be discarded in a clinical waste bag.

**Conclusion**

There is no evidence at present to suggest that significant numbers of infections are being transmitted through standard acupuncture treatments in the UK. None the less, good infection control is essential. Like any other science, new research forces infection control to evolve and refine its procedures. Acupuncturists need to constantly review their standards as new viruses and risks are identified.

**Reference list**

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