Infection Control & Hospital Epidemiology (2019), **40**, 383–390
doi:10.1017/ice.2018.354

Letter to the Editor

Acupuncture-associated infections: A matter of concern in China

Pengcheng Zhou MD[1,2], Yuhua Chen MSN[2], Bizhen Chen MSN[3], Yaowang Wang MSN[2], Xun Huang MD[2] and Xue-Gong Fan MD[1]

[1]Hunan Key Laboratory of Viral Hepatitis and Department of Infectious Diseases, Xiangya Hospital, Central South University, Changsha, Hunan, China, [2]Infection Control Center, Xiangya Hospital, Central South University, Changsha, Hunan, China and [3]Department of Infection Control, The Second Affiliated People's Hospital of Fujian University of Traditional Chinese Medicine, Fuzhou, Fujian, China

To the Editor—The therapeutic benefits of acupuncture have been confirmed by many studies.[1] Acupuncture has become an important component of complementary and alternative medicine throughout the world, and it has been recommended by guidelines.[2] Although the subsequent problem of healthcare-associated infection deserves our attention, few reports of these events are available in the Chinese literature, and these events may be drastically underreported.

Transmission of bloodborne diseases in subjects can occur due to inadequate disinfection and reuse of disposable needles. According to health authority regulations, reusable acupuncture needles should be sterilized by autoclaving. However, short-term disinfection by glutaraldehyde or alcohol soakings or wipes are not uncommon in the primary care organizations and small clinics in China.[3] In view of China's huge populations infected with hepatitis B (~93 million) and hepatitis C (~10 million) as of 2015,[4,5] as well as the estimated growth of HIV-infected patients (769,175) as of 2018,[6] inadequate sterilization might lead to the spread of these diseases. More than 80 hepatitis B cases and several HIV cases have been associated with acupuncture in the other countries[7]; however, it is strange that no confirmed cases have been reported in China, a country with the largest population of viral hepatitis and the greatest use of acupuncture.

Puncture site infections are not uncommon in China; 17 patients were reported to have been infected with nontuberculous Mycobacteria in a private clinic in Zhejiang province in 2012. Puncture site infections mainly result from the inadequate skin disinfection, the use of contaminated acupuncture needles, and the low compliance of hand hygiene among medical staff. The common pathogens of puncture site infections include *Staphylococcus aureus*, Mycobacteria, and Enterobacteriaceae.[8,9] More recently, with increasing antibiotic resistance, multidrug-resistant organisms have become important pathogens.[7]

Occupational exposures might also lead to the transmission of bloodborne diseases to medical staff. Needlestick injuries can occur during the puncture process and withdrawal and discard of needles, in addition to needle cleaning, disinfection, and maintenance. Occupational exposures are very common in the Department of Acupuncture because practitioners of acupuncture are not very aware of standard precautions. During the process of acupuncture, puncture and withdrawal of needle without gloves, cleaning, and maintenance of needles without personal protective equipment are all too common. Nevertheless, epidemiological data regarding occupational exposures related to acupuncture in a national level in China are lacking.

Another issue of concern is that some organizations (eg, barbershops, beauty salons, massage parlors, clinics, and primary hospitals) and individuals perform acupuncture without qualification, and these illegal acts have not been eliminated effectively in China. Unqualified sterilization and nonstandard operating activities might occur more frequently under these conditions because of economic interests or the lack of knowledge of infection control. Outbreak of acupuncture-associated infection in China is possible, and infection control measures are urgently needed for the acupuncture process. The health authorities should apply lessons learned from the spread of human immunodeficiency virus (HIV) to 5 people at 1 hospital after a doctor reused dirty needles during treatment (reported on February 9, 2017).

The following measures might be of great help. First, detailed infection control rules during the acupuncture should be developed and strictly implemented nationwide. Second, reusable acupuncture needles should be replaced by disposable needles as soon as possible. Third, acupuncture staff should be educated about infection control. Lastly, acupuncture by unqualified persons should be forbidden.

Fortunately, the State Administration of Traditional Chinese Medicine is aware of this situation, and guidelines for the prevention and control of acupuncture-associated infections were issued on July 3, 2017.[10] The guideline includes comprehensive and standardized the operation of acupuncture according to 10 aspects: (1) applicable range, (2) management requirements, (3) air ventilation, (4) environmental cleaning and disinfection of facilities especially procedure rooms, (5) cleaning and disinfection of fabrics, (6) provision of hand hygiene stations, (6) requirements for aseptic technique, (7) use and disposal of needles, (8) preprocessing of reusable needles, (9) prevention of occupational exposure, and (10) treatment of occupational exposure. Training courses for the guideline have been held throughout the country.

Acknowledgments. None.

Financial support. This work was supported by the National Natural Science Foundation of China (No.81800472), the Natural Science Foundation of Hunan Province (grant no. 2018JJ6062), and the Soft Science Project of the Fujian Health and Family Planning Commission (grant no. 2016-RK-8).

Conflicts of interest. All authors report no conflicts of interest relevant to this article.

Author for correspondence: Xun Huang, Xue-Gong Fan, Emails: xgfan@hotmail.com, huangxun224@126.com

Cite this article: Zhou P, *et al.* (2019). Acupuncture-associated infections: A matter of concern in China. *Infection Control & Hospital Epidemiology*, 40: 383–384, https://doi.org/10.1017/ice.2018.354

References

1. Liu Z, Liu Y, Xu H, *et al.* Effect of electroacupuncture on urinary leakage among women with stress urinary incontinence: a randomized clinical trial. *JAMA* 2017;317:2493–2501.
2. Qaseem A, Wilt TJ, McLean RM, Forciea MA. Noninvasive treatments for acute, subacute, and chronic low back pain: a clinical practice guideline from the American College of Physicians. *Ann Intern Med* 2017;166:514–530.
3. Reynolds L, McKee M. Possible risks of transmission of bloodborne infection via acupuncture needles in Guizhou province, southwest China. *J Altern Complement Med* 2008;14:1281–1285.
4. Chinese Society of Hepatology, Chinese Medical Association, Wei L; Chinese Society of Infectious Diseases, Chinese Medical Association, Hou JL. The guideline of prevention and treatment for hepatitis C: a 2015 update. *Zhonghua Gan Zang Bing Za Zhi* 2015;23:906–923.
5. Chinese Society of Hepatology, Chinese Medical Association; Chinese Society of Infectious Diseases, Chinese Medical Association, Hou JL, lai W. The guideline of prevention and treatment for chronic hepatitis B: a 2015 update. *Zhonghua Gan Zang Bing Za Zhi* 2015;23:888–905.
6. NCAIDS and NCSTD of China CDC. Update on the AIDS/STD epidemic in China, January 2018. *Chin J AIDS STD* 2018;24:219.
7. Woo PC, Lin AW, Lau SK, Yuen KY. Acupuncture transmitted infections. *BMJ* 2010;340:c1268.
8. Murray RJ, Pearson JC, Coombs GW, *et al.* Outbreak of invasive methicillin-resistant Staphylococcus aureus infection associated with acupuncture and joint injection. *Infect Control Hosp Epidemiol* 2008;29:859–865.
9. Jin T, Zhou HS, Zhang LQ. Nursing care of 17 patients with *Mycobacterium tuberculosis* infection caused by acupuncture and acupoint injection. *China J Emergency Resusc Disaster Med* 2012:1174–1176.
10. The guideline for prevention and control of acupuncture associated infections. State Administration of Traditional Chinese Medicine of the People's Republic of China website. http://www.satcm.gov.cn/bangongshi/zhengcewenjian/2018-03-24/838.html. Updated July 6, 2017. Accessed December 2, 2018.

Is unidirectional airflow in operating theater still recommended to reduce surgical site infections? The French point of view through the recent international literature

Didier Lepelletier[1,2], Bruno Grandbastien[1,3], Olivia Keita-Perse[1,4], Pierre Parneix[1,5], Crespin C. Adjidé[6], Raoul Baron[1,7] and Ludwig Serge Aho Glélé[1,8] for the French Society of Hospital Hygiene Working Group

[1]French Society of Hospital Hygiene, France, [2]Bacteriology and Hospital Hygiene Department, Nantes University Hospital, Nantes, France, [3]Hospital Hygiene and Preventive Medicine Department, Centre Hospitalier Universitaire Vaudois, Lausanne, France, [4]Epidemiology and Hospital Hygiene Department, Princess Grâce Hospital, Monaco, [5]Regional Center for Infection Control and Prevention, Bordeaux University Hospital, Bordeaux, France, [6]Hospital Hygiene Department, Amiens University Hospital, Amiens, France, [7]Hospital Hygiene Department, Brest University Hospital, Brest, France and [8]Epidemiology and Hospital Hygiene Department, Dijon University Hospital, Dijon, France

To the Editor—The indication of unidirectional airflow (UAF) with an airflow velocity between 0.25 and 0.45 m s^{-1} in the operating room to reduce surgical site infections (SSIs) is actually questionable, according to the recent international publications.[1-3] The WHO 2016[4] and CDC 2017[5] guidelines no longer advocate the use of an UAF as a preventive measure to reduce the risk of SSI. However, some authors still recommend doing so in prosthetic orthopedic surgery.[6] The question of the choice of the type of airflow and the air control performance arises or will arise in hospitals during the renovation or the construction of a new operating room.

Recent International Literature

In the study published by Barbadoro et al[7] in 2016, 2 periods were compared: 2001–2013 with turbulent flow use and 2004–2013 with UAF use.[7] After multivariate analysis, a significant decrease of SSI incidence in an operating room equipped of UAF was observed in clean + clean-contaminated surgeries (odds ratio [OR], 0.57; 95% confidence interval [CI], 0.48–0.68) and in contaminated + dirty surgeries (OR, 0.31; 95% CI, 0.17–0.56), respectively. However, this study suffers from numerous biases (ie, nonrandomized single-center survey, no control group, and "before and after" study design).

The meta-analysis published by Bischoff et al[2] in 2017 compared the efficiency of UAF versus turbulent flow in different surgeries. Overall, 12 studies were selected including observational studies (n = 9) or registered database analysis (n = 3). The meta-analysis of 8 cohorts showed no difference in deep SSI incidence after 330,146 hip replacement procedures (OR, 1.29; 95% CI, 0.98–1.71; $P = .07$; $I^2 = 83\%$). Furthermore, no difference was detected after 134,368 knee arthroplasties (meta-analysis of 6 cohort studies; OR, 1.08; 95% CI, 0.77–1.52; $P = .65$; $I^2 = 71\%$). There was no significant difference between digestive and vascular surgeries. The findings of this study are under debate.[6]

In 2017, Oguz et al[8] published a single-center randomized study assessing the influence of 4 factors on the bacterial air contamination after orthopedic surgery: (1) use of UAF, (2) duration of surgical procedure, (3) presence of professionals in the operating room and (4) type of warming (ie, pulsed-air or non–pulsed-air heating system). The patients were randomized into 2 groups, according to the type of warming: pulsating air or electric heating. The unidirectional versus nonunidirectional flow comparison was performed within each randomized group. In multivariate analysis, a significant increase of the number of bacteria in the air was detected according to the duration of the intervention in the absence of UAF.

Author for correspondence: Didier Lepelletier, Email: didier.lepelletier@chu-nantes.fr

French Society of Hospital Hygiene Working Group: Véronique Merle (Centre Hospitalier Universitaire, de Rouen, Rouen, France), Philippe Vanhems (Hospices Civils de Lyon, Lyon, France), Arnaud Florentin (Centre Hospitalier de Nancy, Nancy, France), Pascale Chaize (Centre Hospitalier de Montpellier, Montpellier, France), Michèle Aggoune (Assistance Publique - Hôpitaux de Paris, Paris, France), Anne Savey (Centre de prévention des infections associées aux soins, Lyon, France), Chantal Léger (Centre de prévention des infections associées aux soins, Poitiers, France), Jean-Ralph Zahar (Assistance Publique - Hôpitaux de Paris, Paris, France.

Cite this article: Lepelletier D, *et al.* (2019). Is unidirectional airflow in operating theater still recommended to reduce surgical site infections? The French point of view through the recent international literature. *Infection Control & Hospital Epidemiology*, 40: 384–385, https://doi.org/10.1017/ice.2018.345

https://doi.org/10.1017/ice.2018.354 Published online by Cambridge University Press