

Research & Reviews: Journal of Microbiology and Biotechnology

The Risks of Contaminated Needle Stick Injuries

Haider Abdul-Lateef Mousa
College of Medicine, University of Basrah, Iraq

Editorial

Received date: 03/09/2015

Accepted date: 03/12/2015

Published date: 03/19/2015

*For Correspondence

Dr. Haider Abdul-Lateef Mousa, MB ChB, Msc, PO Box 601, Post Code 42001, Ashar, Basrah, Iraq.

E-mail: haideramousa@hotmail.com.

ABSTRACT

Contaminated needle prick injuries are a major occupational hazard for health care workers, laboratory technicians, hospitals cleaners, and garbage-collecting employees. The heavy load at emergency department and improper waste disposal are the most prominent factors of these accidents. Municipal and health institutions garbage collecting workers most likely do not have knowledge about the infectious risks of needle prick injuries. Therefore, it is an ethical matter and mandatory to educate, warn and train these workers to avoid such injuries. Furthermore, needles and biological infectious material must be discarded properly and kept into secured containers to prevent risks of exposure.

INTRODUCTION

World Health Organization reports in the World Health Report 2002, that of the 35 million health-care workers, 2 million experience percutaneous exposure to infectious diseases each year. In addition, it shows that 37.6% of hepatitis B, 39% of hepatitis C and 4.4% of HIV/AIDS in health-care workers around the world are due to needle stick injuries ^[1]. During 2002 to 2007, it has been reported that 1382 needle stick injuries occurred at Aga Khan University Hospital, Pakistan with higher incidence associated with young doctors (28.5%), and nurses (20.4%). It has been found that approximately 19% of overall injuries occurred during blood collection ^[2]. About 68.2% of health care workers are exposed to needle stick injury where the main factor for such exposure was heavy patient load. The vast majority of needle prick occurred during emergency care. Lack of awareness about post-exposure prophylaxis was found among health care workers in North India ^[3]. As a consequence of the poor sanitary conditions in various health sectors, the investigators found that almost 60% of used syringes are improperly discarded, instead are most commonly dumped into general public waste. In regard to the occupational infectious risks, needle stick injuries were found the most common exposure among healthcare workers in Kuwait, whereas nurses were the most frequently involved healthcare personnel category ^[4]. People involving in garbage collection are more liable to get viral infections due to needle stick injuries ^[5]. Improper disposal of waste increased the risk for needle prick accidents among hospital housekeepers ^[6]. A study including 141 males was carried out on low socioeconomic garbage-collecting people in Karachi which revealed prevalence of hepatitis B 18.8%, followed by hepatitis C 8.5%, and HIV 0.85%. The investigators concluded that the important factors contributing to the high prevalence of hepatitis B and C were needle prick injuries, bare-handed/bare-footed collection of garbage, poor vaccination status, improper garbage disposal system and the site of waste collection ^[7]. Another study also revealed that municipal waste collectors had a significantly higher prevalence of hepatitis B virus infection (15%) in comparison to the control group (2.5%) ^[8]. Skin tuberculosis as a result of contaminated needle prick injuries were also reported among laboratory worker ^[9], and in a health care professional ^[10]. Health care workers also gained other infectious diseases by needle stick injuries including Crimean-Congo hemorrhagic fever ^[11], *Plasmodium falciparum* malaria ^[12], syphilis ^[13], and *Vaccinia* virus infection ^[14]. Sharp-safe needles were introduced recently to reduce the incidence of needle stick injuries. The use of these needles revealed a 26% yearly reduction in needle stick injuries compared with the ordinary ones ^[15]. Post-exposure prophylaxis plays an important role in prevention of blood-borne diseases after needle stick injuries. These procedures include immediate washing of the exposed area with soap and water; determination of risk associated with exposure; evaluation exposure sources for acquired immune deficiency syndrome (HIV), HBV and HCV; assessment of immune status for HBV infection for exposed person (i.e., by history of hepatitis B vaccination), injection of hepatitis B vaccine and immunoglobulin; administration of antiretroviral drugs; and evaluation and follow up of the exposed health care worker ^[16].

REFERENCES

1. http://www.who.int/occupational_health/topics/needinjuries/en/
2. Waheed Y, et al. Epidemiological patterns and risk factors associated with hepatitis B virus in Pakistani population. Asian Biomedicine. 2010; 4: 547-554.
3. Ashat M, et al. Needle stick injury and HIV risk among health care workers in North India. Indian J Med Sci. 2011; 65: 371-8.
4. Omar AA, et al. Occupational injuries prone to infectious risks amongst healthcare personnel in Kuwait: a retrospective study. Med Princ Pract. 2015; 24: 123-128.
5. Abdul Mujeeb S, et al. Recycling of injection equipment in Pakistan. Infect Control Hosp Epidemiol. 2003; 24: 145-146.
6. Ream PS, et al. Biological Risk among Hospital Housekeepers. Arch Environ Occup Health. 2014; 19: 0.
7. Rauf MU, et al. HIV, hepatitis B and hepatitis C in garbage scavengers of Karachi. J Pak Med Assoc. 2013; 63: 798-802.
8. Tsovili E, et al. Municipal waste collectors and hepatitis B and C virus infection: a cross-sectional study. Infez Med. 2014; 22: 271-276.
9. Belchior I, et al. Primary inoculation skin tuberculosis by accidental needle stick. BMJ Case Rep. 2011.
10. Chandramukhi A, et al. Tuberculous skin ulcer following needle-prick injury in a health care professional. J Assoc Physicians India. 2005; 53: 825-826.
11. Celikbas AK, et al. Crimean-Congo hemorrhagic fever among health care workers, Turkey. Emerg Infect Dis. 2014 Mar; 20: 477-479.
12. Tarantola A, et al. Occupational Plasmodium falciparum malaria following accidental blood exposure: a case, published reports and considerations for post-exposure prophylaxis. Scand J Infect Dis. 2005; 37: 131-140.
13. Franco A, et al. Clinical case of seroconversion for syphilis following a needlestick injury: why not take a prophylaxis? Infez Med. 2007; 15: 187-190.
14. Hsu CH, et al. Laboratory-acquired vaccinia virus infection in a recently immunized person - massachusetts, 2013. MMWR Morb Mortal Wkly Rep. 2015; 64: 435-438.
15. Beynon A. A quality improvement initiative to reduce needlestick injuries. Nurs Stand. 2015; 29: 37-42.
16. <http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5011a3.htm>