

AUTOPSY HAZARDS

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Autopsy department staff may be exposed to lots of dangers including:

- Risk of affecting by many infectious disease like: AIDS, hepatitis, tuberculosis.
- They may be attempted by relatives of dead persons.
- Depression may occur frequently in the staff because of their exposure to terrifying scenes during their daily work.

In this article we suppose to discuss about some of the most important hazards threatened autopsy staff like forensic specialists, pathologists, prosecutors , photographers , finger printers , cadaver transporters , forensic lab workers and so on.

From these items infection is the most important and frequent one and we will discuss about it.

There are many infectious diseases which can transmit during dissection of a cadaver .The most considerable items are: Tuberculosis, AIDS, and Hepatitis.

By the way the first point that the examiner should consider, is taking a qualified past -medical history to be informed from any preexisting infections.

HIV viruses can transmit to human beings through autopsy. This virus affects to all parts of immune system and weakens it (cellular, humoral)

Studies have shown that the chance transmission is 0.3% in single needle stick . viruses rarely transmit via breathing and aerosol formation but if blood splashes to mouth and conjunctiva it is possible to infect the person .

The virus may be damaged by sterilization and many chemical agents like hypochlorite and glutaraldehyde.this illness has a long latent period . the patient has no sign and symptom during this time but it is a good time for transmitting of viruses .the first presentation may be encephalitis, high grade lymphoma ,

opportunistic infections , atypical pneumonia and chest infection which doesn't response to therapy. These signs may be alarming .It must be considered that no infection can be detected in "window period " even with complete evaluation of blood samples. Use of accurate tests in suspicious corps before autopsy is a way to prevent it's transmtion.Working with safe thick gloves inhibits entrance of such viruses through autopsy injuries. Sterilization of special devices with proper disinfectant solutions can also prevent virus spread.

In dubious virus exposure by cutting someone's hand during autopsy, washing in running water and letting it to bleed may be useful. Taking a blood sample for checking HIV infection is necessary. The studies have shown that 6 WK therapy with zidovudine may help these victims.

Treatment protocol in such exposures is:

Zidovudine + Indinavir + lamivudine: in high risk infections

Lamivudine +Zidovudine: in intermediate risk infections

No therapy: in low risk infections.

IF blood of injured one shows no infection taking samples from cadaver for detecting probable infection is recommended .if the result is positive drug therapy must be started and checking blood after 6 WKs with no infection may let us to discontinue the drug therapy.

Hepatitis :

Acute viral hepatitis is a systemic disease which involves liver principally. Sometimes the agent persists in blood and other tissues but no sign of illness is present (window period).

The studies have shown that super imposition of e-antigen increases risk of hepatitisB infection .The most important point to prevent this disease is vaccination of at risk workers (three times in 1-2-6 months intervals and then every 10 years with checking HBV antibody).Careful working and avoiding injuries caused by infected needles and knives is very important .

All types of hepatitis viruses are damaged by hypochlorite and glutaraldehyde .

Tuberculosis :

TB is one of the oldest diseases especially in developing and under developed countries. It generates from mycobacterium family of microorganisms (mycobacterium tuberculosis). This illness affects emigrants and poor people predominantly but medical staff may be affected because of their job. One of the most important problem in approach of it is drug resistance.

All personnel who work with cadavers must inoculate BCG vaccine.

This microorganism is sensitive to sterilization, phenol and glutaraldehyde .

Using suitable protecting devices like masks, gloves, boots and glasses can decrease the risk of infection.

Routes of infection transmission:

1-Inhalation

2- Inoculation(wounds)

3-Mucosal surfaces

4- Ingestion

Inhalation:

Sneezing, incorrect displacing the cadavers, careless autopsy with splashing blood and other aqueous parts of the body may facilitate spreading infections.

Inoculation:

Infections like HIV, HBV, HCV, brucellosis, leptospirosis may spread through wounds or unsterile injection

Mucosal membrane:

Splashing blood and bone particles may transmit many infectious agents including HIV and hepatitis.

Ingestion:

Dissection and washing large and small bowl may contaminate contact surfaces specially prossector's hands. Eating, drinking and smoking with these dirty hands can cause serious illnesses like salmonella.

Offering ways to prevent transmission of infection:

1-Do autopsy in clean and suitable places (for infective cadavers we need mechanical ventilation, bacterial filters and UV light).

2- take medical history from relatives or physician If possible.

3- In known cases of high grade infection don't do autopsy or do limited one (if it is possible)

4-Allautopsy staff must use standard covers with protective glasses, gown, gloves and masks (preferably Nq5 masks)

5- Usage of standard and sharp devices .using blunt knife needs great force and may cause greater danger.

6- Don't do mummification process in blood born infected corpse.

7- Collect all reminding parts in covered containers after autopsy.

8-Relatives may see the dead body after autopsy but kissing and touching of cadaver is forbidden.

9-All autopsy devices must be sterilized and disinfected with use of solutions like:chlorine,phenol, formaldehyde, glutaraldehyde, ethyl alcohol , Na hypochiolate, ammonium chloride.

11-Vaccination against hepatitis,tetanous and diphtheria is mandatory.

12- Using prophylactic protocol in suspicious cases.