



"HOUSEHOLD WASTE COLLECTION"

Risk of accidents with sharp cutting bio hazardous material



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PRESENTATION

The following work was done from the statistics, based on data from occupational accidents in CMIFR with sharp cutting materials on collectors of household waste that occurred during the period of 2 years (2009-2011). These numbers are very high, which shows an absence of prevention and training on risks.



Health effects

- **Direct:** Direct contact with waste, both collectors and scavengers (cardboard pickers), injuries of different magnitudes in different body locations, respiratory diseases, cutaneous and infectious as HIV, Hepatitis B and C.
- **Indirect:** Typhoid fever, salmonellosis, Gastrointestinal symptoms, Leptospirosis, Bubonic Plague (for proliferation of rodents), etc.



Main Characters

- They belong to companies that have a higher accident rate in Argentina today.
- Male, from levels of society with fewer resources and, in general, heads of household.
- Pre-employment examination: physical review, chest and lumbar spine radiographies, routine laboratory tests and audiometry.
- Average working time: 5 hours a day, with a frequency of 6 days per week.



Study

- Period from 01/01/2009 to 12/31/2011
- 5 companies in charge of waste collection in the Buenos Aires Federal District and the suburban area around the Federal District .
- 75 affected workers.
- Action mechanism: Collision with an object while carrying waste bags (felt a sting).
- Nature of the lesions were sharp cutting injuries.



Pathology

- Most common viral diseases are HIV and Hepatitis B and C.
- **Exposure or accident:** Contact with blood and other body fluids, through percutaneous inoculation or contact with an open wound, skin or mucous membranes during the course of work activities.



HBV & HCV

- **HBV:** If the source has positive HBV markers (surface antigen and / or positive E antigen) the risk of acquiring infection from a percutaneous injury with blood is from 7 to 30%, according to several sources.
- **HCV:** acute forms are mild and rarely originate fulminant forms, but about 85% evolves to chronicity. This form can evolve both to cirrhosis and the HCC. The estimated world prevalence is 3% according to WHO data.



Prophylaxis Post Exposition

Mandatory protocol used in Argentina

- Continued for 4 weeks.
- Initiated within 24 hours after the accident.
There is no concrete evidence of the usefulness of this preventive treatment if it starts beyond 24 hours.
- No license is granted in these cases, meaning that the worker after the protocol in the medical center, can return to his job the following day.



Prophylaxis Post Exposition

Mandatory protocol used in Argentina

If the source is infectious HBV:

- **A. - If staff are vaccinated with 3 doses and has responded positively to antiHBs, no vaccination is necessary.**
- **B. - If staff are not vaccinated or was in an incomplete form, it's indicated 4 ml of hyper-immune human gamma globulin anti HBV intramuscularly (within 24 hours) and begins vaccination scheme against hepatitis B.**



Serological Monitoring

Mandatory protocol used in Argentina

- Once the accident took place (time 0), control is performed at 45 days and at 3, 6 and 12 months.
- Hematological and chemical pathology (blood count, SGOT, SGPT and CPK.) At the time of the accident, at 2 and 4 weeks, if prophylaxis is being given to the worker.



STUDY DATA (I)

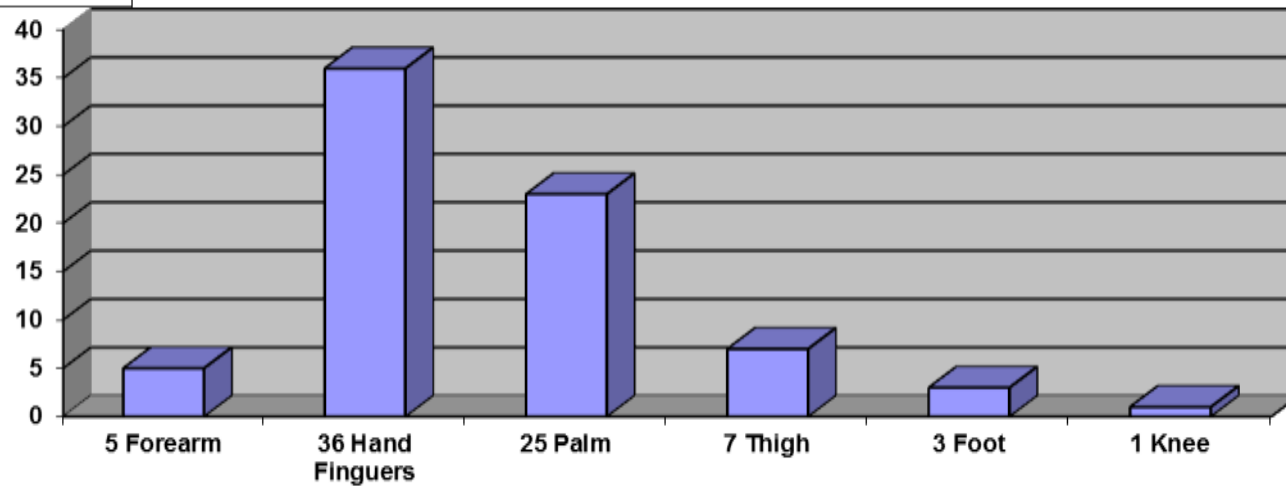
- The vaccination schedule for hepatitis B, had not been offered or applied to any of the workers, including the incomplete forms.
- Of the 75, only 20 had the complete vaccination against tetanus, of which 14 had it on the occasion of other accidents of a similar nature.
- The initial serology HIV, HBV was negative in the 63 patients and was not performed in 12 subjects who rejected the PPE. HCV was positive in 7 cases.
- 63 of the workers chose to perform the proposed treatment. Of these, only 43 completed the treatment for a month. The main causes were from poor tolerance and non-attendance to control.



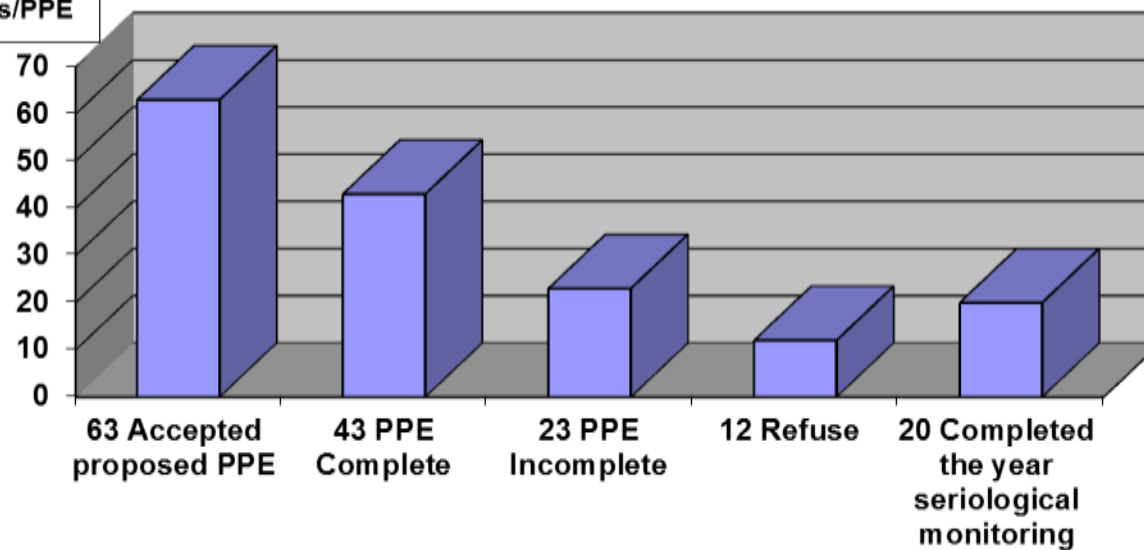
STUDY DATA (II)

- Of the 43 workers who completed PPE, 23 left the serological monitoring that is performed for a year. 20 of the subjects continued monitoring.
- Within the 20 who completed the follow-up, there was no seroconversion after exposure at all.
- Unfortunately, it is unknown the biological fate of the 32 patients who refused treatment or failed to pursue.

75 Cases of wound localization



Workers/PPE





- In all cases, was used as PPE basic treatment AZT + 3TC associated with an antibiotic for the risk of wound infection.
- A striking fact was that at the time of the accident, 13 workers were conducting the prophylaxis or follow-up due to an accident in the course of that year.



NEGATIVE RESULTS FROM STUDY

- Companies do not provide workers prophylactic immunization plans. They receive medical care and treatment whenever there is a work accident, therefore, they are not protected with tetanus vaccination or the anti hepatitis B scheme.
- Not all accidents are reported.
- The decision not to perform post-exposure prophylaxis or abandoning before completing the 4 weeks treatment, when there was an accident with sharp cutting high risk characteristics, for lack of information.



CONCLUSIONS (I)

- Currently, the CDC says that the condition of pregnancy does not contraindicate the PPE.
- PPE is not effective for hepatitis C.
- PPE inhibits the replication of the initial inoculum of virus and thereby prevents the establishment of chronic HIV infection.
- Not waterproof work clothing, in violation of the characteristics required for protection from cutting and / or piercing elements.
- The footwear is the worker's choice: no special shoes are used.
- The lack of protection is also reflected in the lack of primary prevention, through mandatory immunization for all workers systematically at admission. This is required as a prerequisite, but the companies does not satisfy this obligation.
- Lack of information, inaccurate or incomplete information about the minimum care required to perform tasks, leads to a decreased alertness in the perception of risk.



CONCLUSIONS (II)

- **Workers who collect household waste are not included in the legislation as exposed to pathogens.**
- **It must be recognized the actual risks that present these workers. It is essential for behavioral change, to reposition the primary prevention and implement improvements in working conditions.**



THANK YOU

