



ANALYSIS OF OCCUPATIONAL ACCIDENTS INVOLVING EXPOSURE TO BIOLOGICAL FLUIDS IN A PORTUGUESE PERIPHERAL HOSPITAL: IMPLEMENTATION AND EFFICACY OF POST-EXPOSURE PROPHYLAXIS

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INTRODUCTION

- **Occupational accidents** (OA) involving **exposure to biological fluids** are a **significant concern** in Occupational Health due to their **high prevalence**.
- **Exposure** is defined as "percutaneous injury and/or contact with blood, tissues or other **potentially infectious** bodily fluids; with mucous membranes, damaged skin or extensive areas."
- **Post-exposure prophylaxis** (PEP) is an essential **preventive** measure to **reduce the risk of infection** following accidental exposure.

OBJECTIVES

- To analyse the **occurrence of OA** involving biological risks.
- To analyse the **implementation of PEP** and the **associated outcomes** in a hospital setting.

MATERIALS AND METHODS

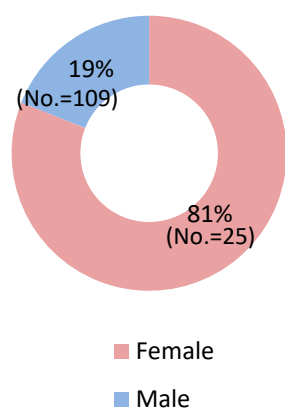
- **Descriptive** and **retrospective observational** study.
- OA involving biological risks between **January 2020** and **March 2024** at **ULSM**.
- Data collected from "SCLínico Hospitalar" software.

RESULTS

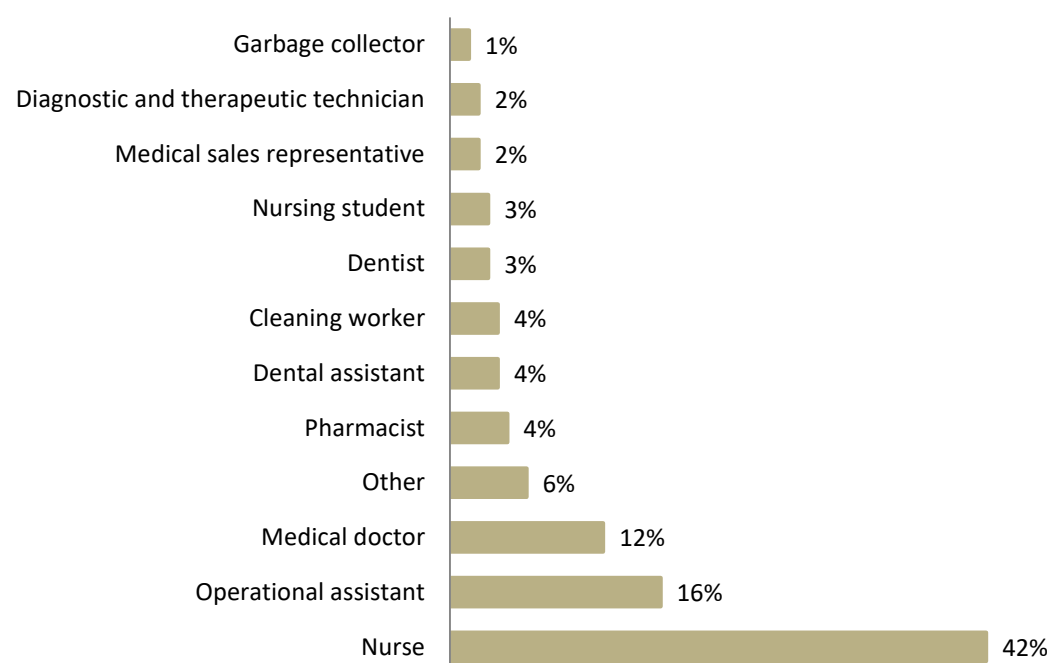
- A total of **134** cases of **OA with exposure to biological risk** were recorded between January 2020 and March 2024.
- Workers were admitted to the Emergency Department and later referred to the Infectious Diseases consultation, where they were followed up.

CHARACTERIZATION OF WORKERS

SEX DISTRIBUTION

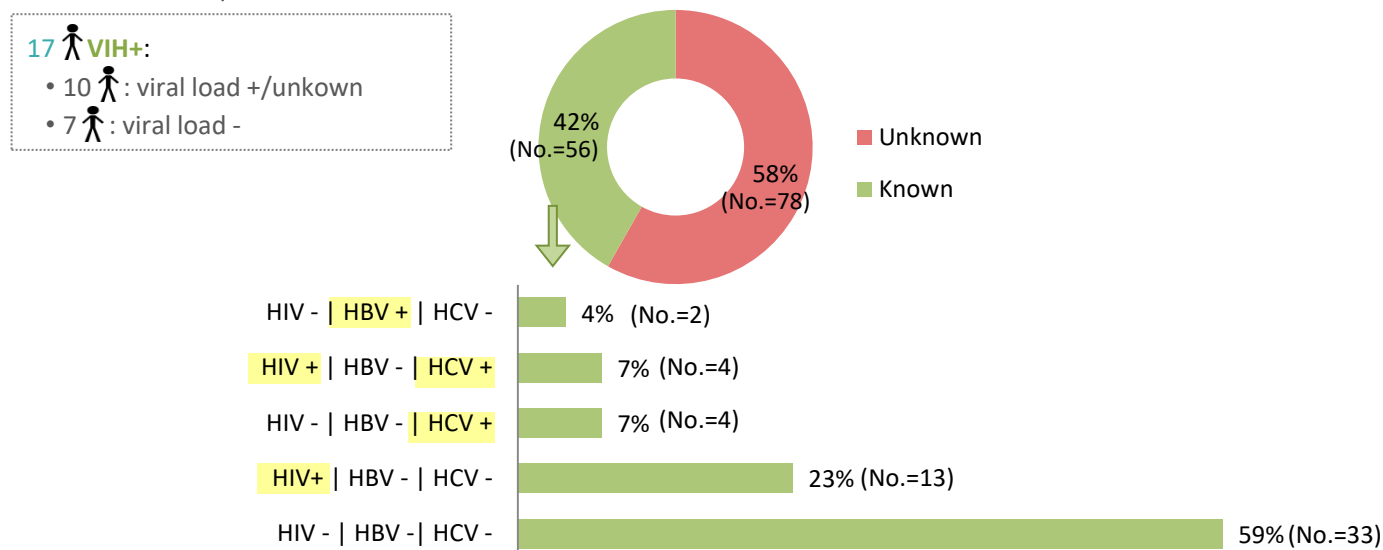


PROFESSIONAL CATEGORY DISTRIBUTION



PATIENT-SOURCE SEROLOGY

- Regarding the serology of the source patients, 58% were unknown and 42% were known.
- From the known serologies, the following results were observed:
30% (No.=17) HIV+ | 14% (No.=8) HCV+ | 4% (No.=2) HBV+

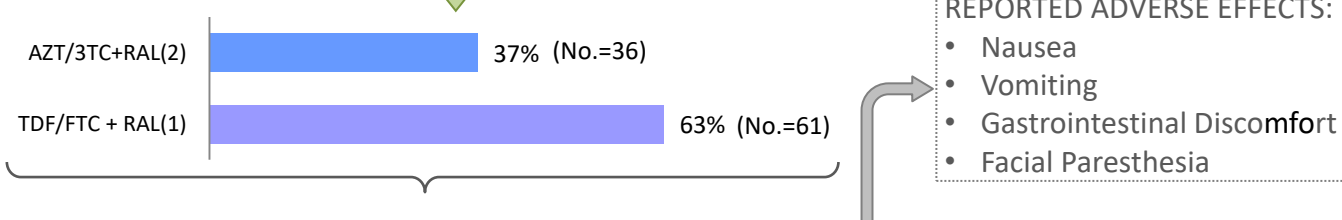
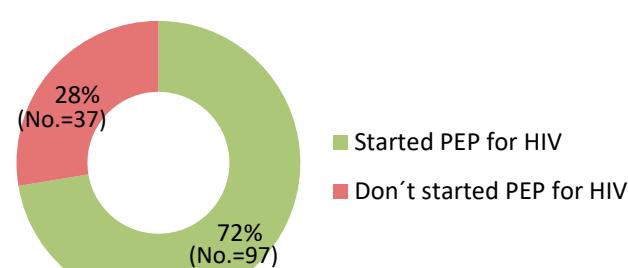


INJURED WORKER

- **All** the injured workers who underwent PEP started it within the **FIRST 72 HOURS** after the occupational accident.

HIV

- **72%** of the workers started PEP for HIV. From these:
 - ✓ **63%** received Tenofovir Disoproxil 245mg/Emtricitabine 200mg +Raltegravir 400mg⁽¹⁾
 - ✓ **37%** received Zidovudine 300mg/Lamivudine 150mg + Raltegravir 400 mg⁽²⁾



REPORTED ADVERSE EFFECTS:

- Nausea
- Vomiting
- Gastrointestinal Discomfort
- Facial Paresthesia

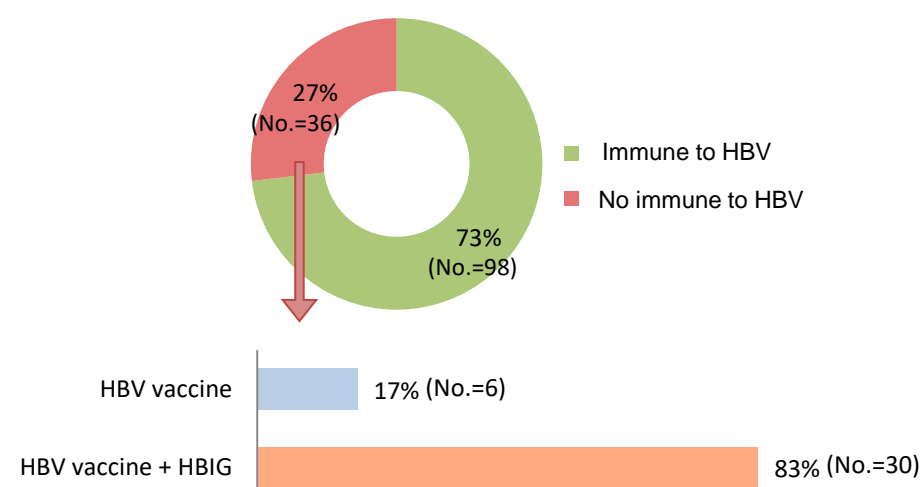
- **4** workers changed the therapeutic regimen due to **intolerance to adverse effects**.
- **9** workers **discontinued** antiretroviral treatment after receiving a **negative HIV** serology result from the source.

HBV

- **27%** of the workers did not have protective anti-HBs antibody titles. From these:
 - ✓ **83%** received the HBV vaccine + HBIG
 - ✓ **17%** received only the HBV vaccine

Cases where:

- Injured Worker: Not immune to HBV
- Source: HBV negative



After **6 months of follow-up** in Infectious Diseases Consultation, **no positive cases (n=0)** of **HIV** and/or **HBV** and/or **HCV** were reported.

DISCUSSION/CONCLUSION

- OA with biological risks occurred **predominantly** among **healthcare professionals** (nurses, operational assistants and medical doctors), probably due to a combination of **factors inherent to the hospital environment** and the **nature of their daily tasks**. Indeed, these professionals are frequently in contact with **potentially infectious fluids while performing high-risk procedures**—such as intravenous medication administration, blood collection and handling of sharp objects—and are associated with **high workloads** and **fatigue**, which may result in reduced attention and an increased occurrence of human error.
- In the facilities where there is **exposure to HBV**, it is essential to document **workers' immunity to HBV** upon **pre-employment medical assessment**. If they are not immune, they should receive **booster vaccination** to ensure adequate protection against HBV.
- The **serological evaluation of the patient-source** is crucial, as it may **prevent the unnecessary initiation of PEP**. When necessary, **implementing PEP**, as well as **monitoring adherence to therapy** and its **adverse effects**, is essential to prevent infections. It is crucial that the worker goes to the Emergency Department **immediately** after the occurrence of the OA to start PEP as early as possible. In this study all workers started PEP within the **first 72 hours** after the OA, without compromising its efficacy.
- In summary, OAs involving biological risks can have a significant **impact** on the **injured worker**, **society** and on the **economy**. Therefore, investing in **preventive policies** and **improving working conditions** is essential to reduce the occurrence of these accidents.

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