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### RESEARCH ARTICLE

#### ECOLOGY OF NOSOCOMIAL INFECTIONS IN THE ENVIRONMENT OF RESUSCITATION OF SURGICAL EMERGENCIES ABOUT 332

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#### Manuscript Info

##### Manuscript History

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#### Abstract

Nosocomial infection is any infection contracted in a healthcare establishment by any patient whose symptoms appear after 48 hours of hospitalization, 30 days for the operative site and one year in the case of an intervention. Their high frequency, cost and severity make nosocomial infections a major health problem. Its surveillance is not an end in itself, it is designed as a means of guiding prevention, from which it must therefore gather the necessary information.

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#### Introduction:-

Nosocomial infection is any infection contracted in a healthcare establishment by any patient whose symptoms appear after 48 hours of hospitalization, 30 days for the operative site and one year in the case of an intervention. surgical

Their high frequency, cost and severity make nosocomial infections a major health problem.

Its surveillance is not an end in itself, it is designed as a means of guiding prevention, from which it must therefore gather the necessary information.

Our work aims to achieve several objectives, namely:

1. analyze the epidemiological and bacteriological profile of nosocomial infections in the intensive care unit of surgical emergencies.
2. Identify predisposing factors and those influencing the prognosis.
3. Establish a preventive strategy.

#### Materials And Methods:-

This work consists of carrying out a retrospective study of 332 cases of nosocomial infections in the intensive care unit of surgical emergencies. of the Ibn Rochd CHU in Casablanca carried out between January 2007 and November 2011.

Have been included:

- All patients who have stayed in the service for more than 48 hours.

Have been excluded:

-Any patient who stayed or died within 48 hours after admission and those who presented an IN outside the intensive care unit of surgical emergencies

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The diagnosis of IN was based on the use of criteria issued by the technical committee for nosocomial infections and care-related infections (CTINILS).

The collection of anamnestic, clinical and bacteriological data was based on an operating sheet, based on clinical records.

The data were entered and analyzed with the EPI INFOS version 6 software. The statistical analysis is performed using the Student test and the CHI 2 test. A P value <0.05 was considered significant. In order to compare our results with other series, the incidence density was used for epidemiological analysis.

**Results:-**

Of the 332 cases collected, there is a clear male predominance over the entire study period with a sex ratio of 4.9. The average age is  $43 \pm 17$  years.

Regarding the reason for hospitalization, the predominance of traumatic pathologies is raised with a percentage of 67.16%.

To better assess the severity of infected patients, we mainly used the following scores;

The GCS was on average  $10 \pm 3$ . The IGS II was on average  $28 \pm 9$ .

In terms of history, 28.2% of infected patients have a pathological history of which diabetes is the most common.

Among 1932 patients hospitalized during the study period, 1725 were hospitalized for more than 48 hours, of which 332 were infected, for an incidence of 19.25%.

The overall incidence density was 36.6 per 1000 hospital days and that per infectious site shows a high rate of pneumonia.

In terms of infectious sites, pulmonary infection ranked first throughout the study period. Of our infected patients, 34.3% received prior antibiotic therapy.

Regarding specific risk factors, the majority of our infected patients were exposed to invasive devices.

In the first place, mechanical ventilation, which was found in 55.7% of patients with nosocomial pneumonia, the occurrence of this pneumonia lengthens the average duration of ventilation.

As for the bladder probing, 30.2% of patients with urinary tract infection were probed. The mean probing time was also lengthened by this infection. Furthermore, its occurrence was not influenced by gender.

Regarding the 3rd invasive device, central catheterization, 44.7% of patients with a central catheter developed bacteremia, without this influencing the mean duration of catheterization.

**Regarding the bacteriological profile:**

73.3% of the germs incriminated are BGNs dominated by Acinetobacter and Klebsiella, while 26.7% of the germs are CGP with SAMS in the lead.

Likewise for pneumonia, BGNs are the most frequently isolated organisms with the predominance of Acinetobacter and pseudomonas.

As for postoperative peritonitis, E. coli, pseudomonas and proteus mirabilis are the most dominant organisms.

With regard to bacterial resistance, Acinetobacter has shown a high rate of resistance to the main common antibiotics such as FQ, C3G, ceftazidime and imipenem.

In Pseudomonas, resistance to imipenem and ceftazidime was moderate compared to resistance to C3Gs.

However, the sensitivity of Klebsiella to imipenem was preserved.

### **Discussion:-**

A review of the literature was essential for us to compare the study carried out in our context with international ones. The relatively low incidence (1) obtained by our work can be explained by the severity of the condition of hospital patients who die before developing the infection.

Regarding the bacteriological profile, most of the literature reinforces the predominance of BGNs (2). The most common germs of which are acinetobacter, pseudomonas, and in-ward invasive devices include klebsiella and E. coli.

The rates of nosocomial infections vary depending on the type of activity of the service, the recruitment of the establishment, the method of calculating the rates and the quality of information collection. It is four times higher in intensive care units. Patients admitted to intensive care units have a particular risk of contracting nosocomial infection (NI) with a high prevalence rate. This risk is 5 to 10 times greater than that acquired in medical or surgical services. This may be explained by the severity of inpatients requiring invasive devices.

The most frequent infections affect the urinary tract (30% of IN), the respiratory tract (pneumonia represents 15% of IN) and the surgical site (surgery, 14%). We will see later that this distribution is completely different in intensive care units.

### **Conclusion:-**

Nosocomial infection is fraught with heavy mortality and morbidity. not to mention the high cost which represents an economic burden which is added to the budgetary constraints of hospitals. In order to limit this damage, a preventive strategy must be organized which will be based on:

1. -general measures mainly washing hands by friction with a hydroalcolic product, the proper use of gloves, isolation of patients at risk, and the geographical organization of services.
2. -Preventive measures of the most exposed sites such as the respiratory system, urinary system and blood.
3. -epidemiological surveillance of germs.
  - relevance of therapeutic procedures.
4. -a better prescription of ATBs adapted to the service.

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