Nosocomial infections (NI) occur in a healthcare setting. Health-care associated (HCA) infection occurs during care of a patient.

Bloodstream infections are the 4th most common NI in France and half of the cases are associated with a vascular catheter.

Reducing invasive device-related bloodstream infections is a major priority of the national program prevention of HCA infections in France.

In our hospital: increase of health-care associated bloodstream infections (HCA-BSI) including those related to invasive devices.

Objectives:
- Describe HCA-BSI acquired in our establishment;
- In order to reduce the number of infections related to invasive devices;
- By promoting the right use of invasive devices.

Material & methods:
We applied the methodology of the French network SPIADI to compare our results with those of the other monitored hospitals.

Background & importance:

Each positive blood culture was analyzed, a file was open for HCA-BSI.

File with multiple parts

Administrative part

Clinical part

Data on vascular catheters

Microbiological part

Patient’s identity, characteristics of his hospitalization

Date of HCA-BSI and portal-of-entry of the infection

Type of catheter, insertion site, date of insertion, date of removal

Microorganism and antibiotic sensitivity

Between January and April 2020

For HCA-BSI related to invasive devices

Intensive care, pediatrics, nephrology, hemodialysis and surgery were excluded (no electronic medical records)

We included 156 patients with HCA-BSI

60% were over 65 years old

66% were immunosuppressed

We open 164 HCA-BSI files

21% identify in oncology

17% identify in hematology

Results:

Portal-of-entry of HCA-BSI (N=164)

- Urinary (n=44) 27%
- Catheter (n=40) 24%
- Digestive, Abdominal (n=21) 13%
- Digestive translocation (n=19) 11%
- Cutaneous (n=10) 6%
- Pleuro-pulmonary (n=6) 4%
- Surgical site (n=4) 2%
- Endocarditis (n=1) 1%
- Other (n=6) 4%
- Not found (n=13) 8%

Type of catheter (N=40)

- Implanted port catheters (n=25): 63%
- MIDline catheter (n=4): 10%
- PICC line (n=3): 7%
- Peripheral venous catheter (n=3): 7%
- Central venous catheter (n=5): 13%

Micro-organisms involved in HCA-BSI:
- 44%: Enterobacteriaceae
- 26%: Staphylococci

Enterobacteriaceae were mostly responsible for HCA-BSI with a urinary portal-of-entry.

Staphylococci were mostly responsible for central line associated bloodstream infections.

National data:

The incidence of HCA-BSI was comparable to that of other institutions, except for oncology, where it was higher particularly for implantable port catheters (IPC).

Incidence of HCA-BSI in oncology per 1000 hospital days (HD) compared to other institutions:

- One institution: 8.37
- Our hospital: 2.87

Conclusion & relevance:

In light of these results, we implemented a strategy involving the reporting of surveillance data, the updating of protocols with professionals, practice observations, and the training of professionals in charge of handling invasive devices.

The impact of all these measures will be assessed through the results of future monitoring.