REDUCING INVASIVE DEVICE-RELATED BLOODSTREAM INFECTIONS: A CHALLENGE FOR THE PREVENTION OF HEALTH-CARE ASSOCIATED INFECTIONS

L. MARCO[1], F. SIROT[1], C. BERDOT[1], F. SCOTTO[1], C. PROUST[1], A. BOUSSEAU[1], C. LALAND[1], S. THEVENOT[1]
1: UNIVERSITY HOSPITAL OF POITIERS, HYGIENE, POITIERS, FRANCE

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2. Case studies with patient consent

Background & importance

Nosocomial infections (NI) occurs 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**
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

programme national d'actions de prévention des infections associées aux soins

Aim & objectives

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**

Material & methods

We applied the methodology of the French network **SPIADI** to compare our results with those of the other monitored hospitals-

Each positive blood culture was analyzed, a file was open for HCA-BSI → Between January and April 2020 → Intensive care, pediatrics, nephrology, hemodialysis and surgery were excluded (no electronic medical records)

File with multiple parts

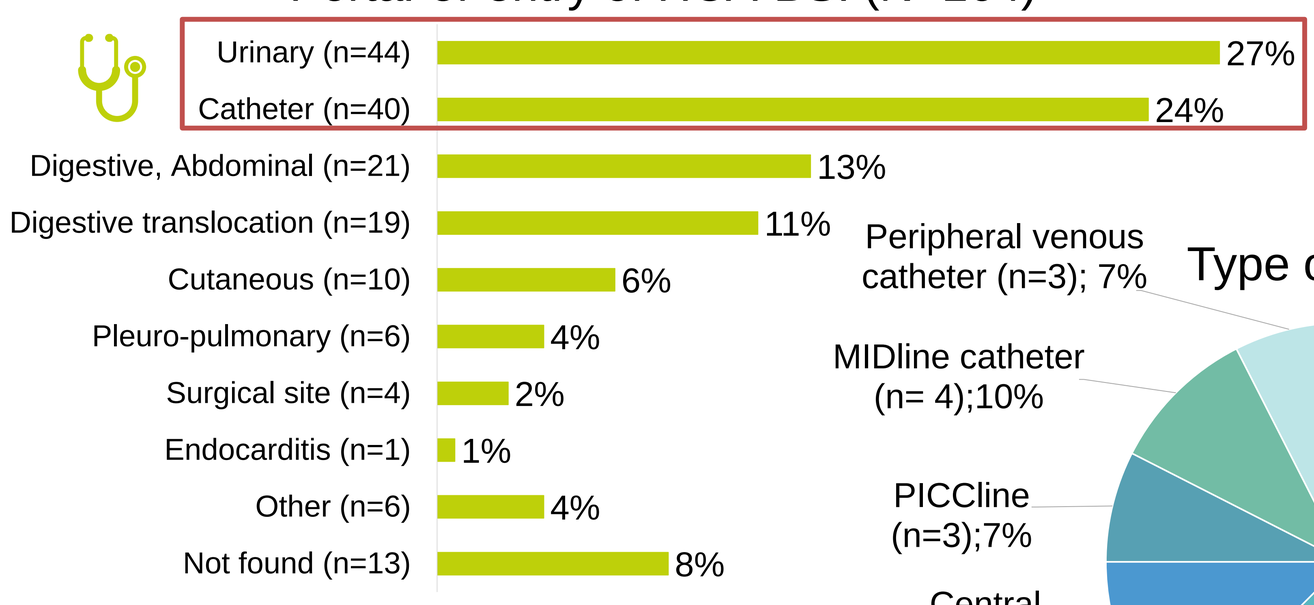
- Administrative part: Patient's identity, characteristics of his hospitalization
- Clinical part: Date of HCA-BSI and portal-of-entry of the infection
- For HCA-BSI related to **invasive devices**:
  - Data on vascular catheters: Type of catheter, insertion site, date of insertion, date of removal
  - Data on urinary catheters
- Microbiological part: Microorganism and antibiotic sensitivity

Results

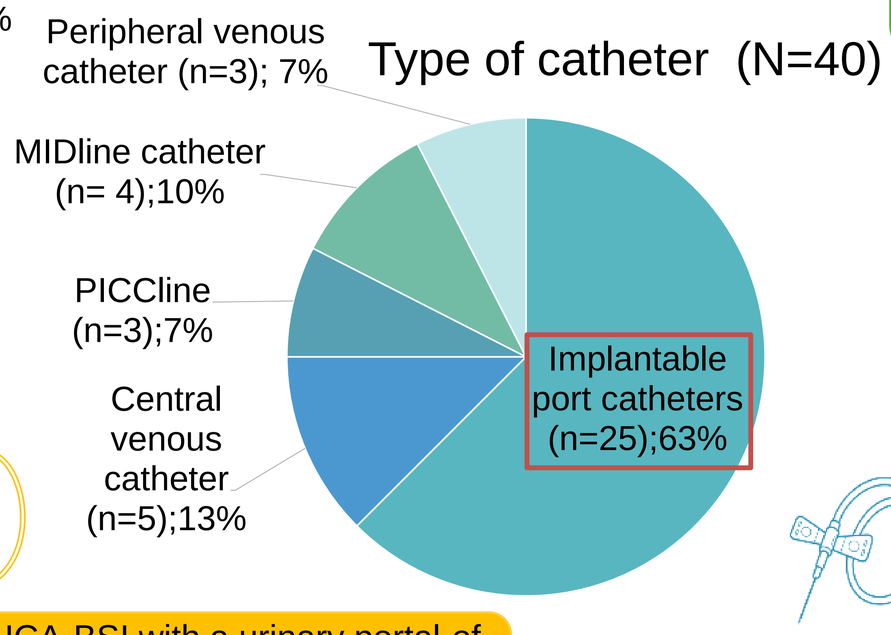
We included **156 patients** with HCA-BSI
- **60%** were over 65 years old
- **66%** were immunosuppressed

We open **164 HCA-BSI** files
- **21%** identify in oncology
- **17%** identify in hematology

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



Type of catheter (N=40)



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**

Half of HCA-BSI with a urinary portal-of-entry → **patient with urinary catheters in the previous 7 days** before infection

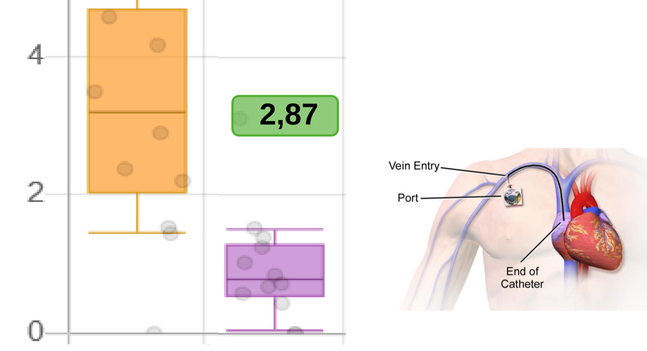
Average time for HCA-BSI urinary portal-of-entry with urinary catheters (days) N= 18	
Min	1
Max	48
Median [quartil 1; quartil 3]	**9** [3;18]

Average time for HCA-BSI catheter portal-of-entry (days) N=40	
Min	2
Max	2132
Median [quartil 1; quartil 3]	**80,5** [19,75;258]

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



All HCA- BSI
National average= 3,65 per 1000 DH

IPC responsable of HCA-BSI
National average = 0,96 per 1000 DH

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.