Epidemiology of hospitalized acute pyelonephritis and factors associated with kidney diversion and death: a national cross-sectional study (FUrTIHF 2)

Leslie GRAMMATICO-GUILLON[1,2,3], Emeline LAURENT[1,4], Maxime VALLEE[3,5], Aurélien DINH[3,6], Albert SOTTO[3,7], Franck BRUYERE[2,3,8]

[1] Department of Public Health, Epidemiology, Clinical Data, Teaching Hospital of Tours, Tours, France; [2] Medical school, University of Tours, Tours, France; [3]ID Committee from the French Association of Urology (*Comité d'infectiologie de l'Association Française d'Urologie CIAFU)*, France; [4] Research unit EA7505 Education, Ethics and Health (*Education Ethique et Santé*), University of Tours, Tours, France;
[5] Department of Urology, Teaching Hospital of Poitiers, Poitiers, France; [6] Department of infectious diseases, Teaching hospital of Paris, Garches, France;
[7] Department of infectious diseases, Teaching hospital of Nîmes, Nîmes, France; [8] Department of Urology, Teaching Hospital of Tours, Tours, France

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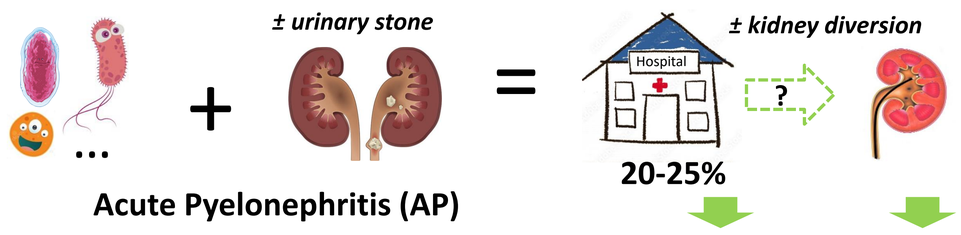
INTRODUCTION



Objectives:

- Measure the **incidence of hospitalized AP in France,** particularly with **kidney diversion (KD)**
- Identify the **factors associated with KD / death**

METHODS

- Population : patients ≥18 years old, hospitalized in France (public + private healthcare facilities), 2014-2019
- Case definition and selection of AP patients via medico-administrative hospital discharge databases:
  - **AP**: ICD-10 diagnosis codes – Predictive Positive Value PPV 90.6%
  - **KD**: French current procedure terminology *CCAM* codes – PPV 100%, Sensitivity 90.9%
- **Factors associated with KD and death** identified in the hospital stay resumes (ICD-10 codes for conditions) with logistic regression models, adjusted on the presence of a urinary stone

RESULTS

527,671 patients ➔ 18.3 / 10,000 inhabitants

- ♀ >> ♂ and older age; increasing over time *(fig.1)*
- Diversion 13.1%, increasing over time, mainly in males *(fig.2)*
- Urinary stone: 48.3% of the UD practiced
- E. coli 48.0% *(fig. 3)*
- Sepsis 19.9%; 29.0% in case of UD
- In-hospital case fatality 5.9%

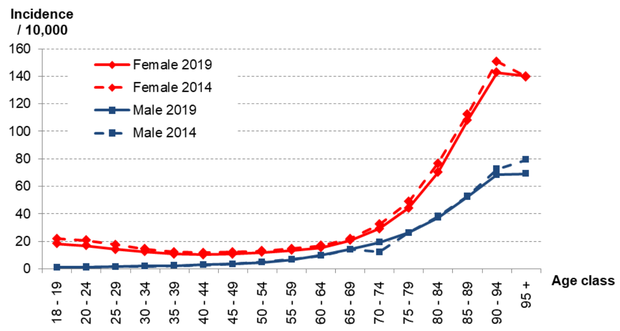


Figure 1 Incidences of hospitalized AP by age and sex, France, 2014 vs. 2019

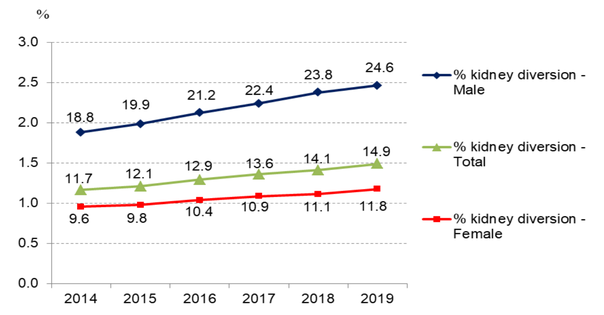


Figure 2 KD rate of patients hospitalized with AP, by sex, France, 2014 vs. 2019

Factors associated with KD *(fig. 4A)*:

- Male sex
- Age between 40 and 70 years old
- Comorbidities (Charlson index ≥3)
- Sepsis

Whereas *E. coli* was less frequently associated with KD.

The same factors were associated with death *(fig. 4B)*

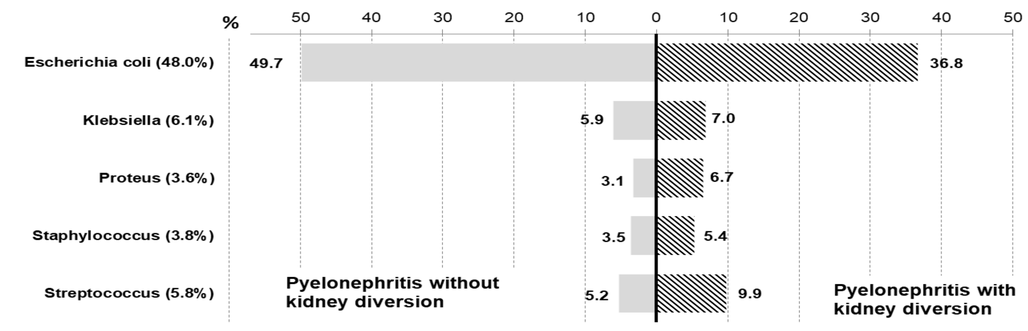
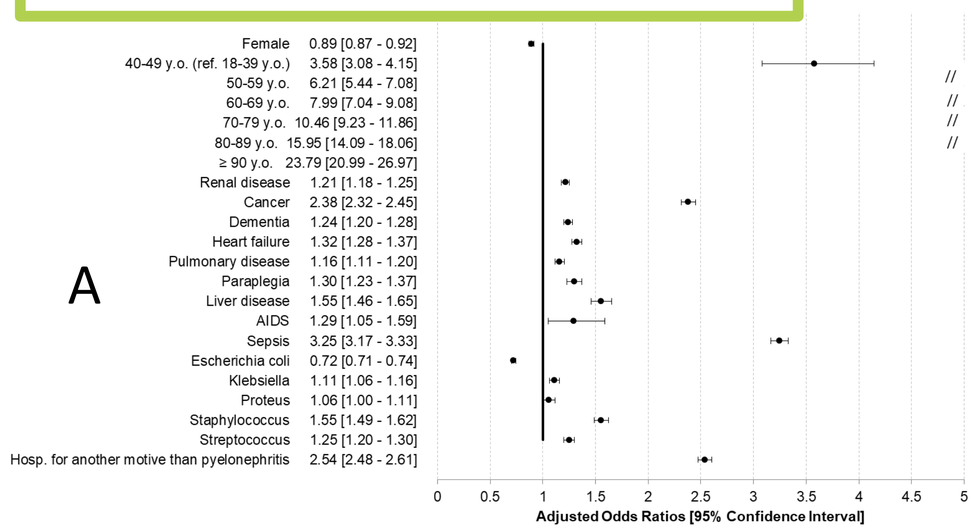


Figure 3 Micro-organisms coded in hospitalized AP, according to the presence of a KD, France, 2014-2019



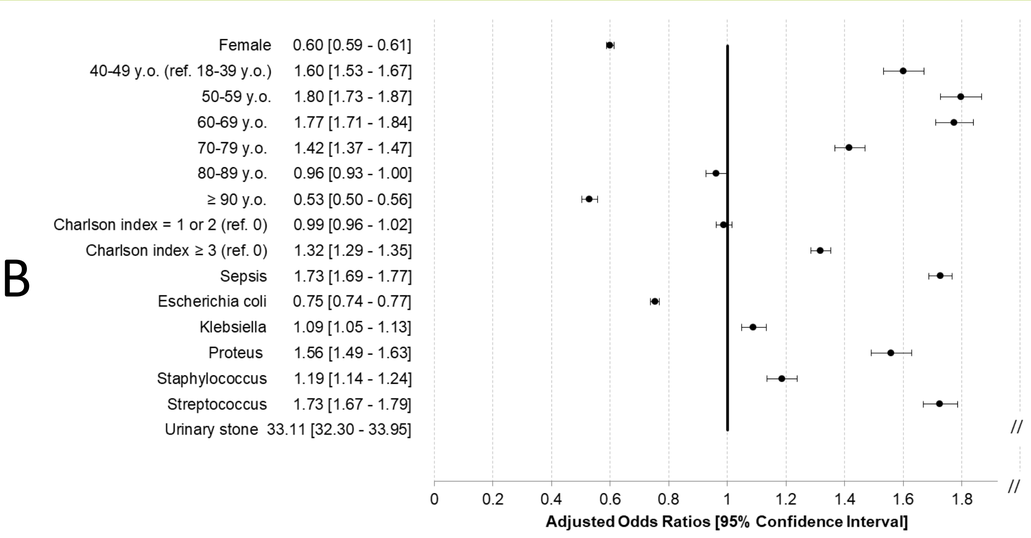


Figure 4 A. Factors associated with kidney diversion (KD) B. Factors associated with death

DISCUSSION

- First population-based study of patients hospitalized AP describing trends in incidence, patterns and factors associated with KD and death.
- With a validated algorithm, this national study based on a large real-life national database from 2014 to 2019 showed an increasing number of AP in hospitalization, along with increasing number of urinary stones and KD.
- Factors associated with KD were identified: sepsis, elderly and comorbidities, also associated with fatality.
- These identified factors could help the urologist to a rapid decision making.

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Corresponding author: *leslie.guillon@univ-tours.fr*

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