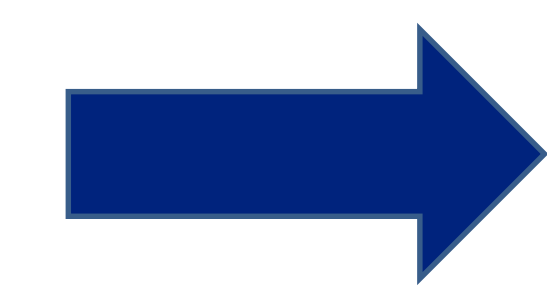


S. de Lafforest^{1,2,3}, A. Magnier⁴, F. Saint⁴, C. Brizard^{1,2}, C. Gaborit^{1,3}, F. Bruyère^{2,4}, L. Grammatico-Guillon^{1,2}

¹ Epidémiologie des Données cliniques en Centre-Val de Loire (EpiDcliC) - CHRU de Tours ; ² Faculté de Médecine, Université de Tours ; ³ EA 7505 ; ⁴ Service d'urologie - CHRU de Tours ; ⁴ Service d'urologie - CHU de Amiens-Picardie and the study group of the CIAFU (Commission infectiologie AFU)

Introduction

- Urinary tract infections (UTIs) are the most common bacterial infections
- UTIs have various clinical presentations
- The management of UTIs is not the prerogative of one specialty, especially in hospitals



No data regarding the accurate incidence of hospitalized UTIs, and so neither their epidemiological impact

Objective : To estimate UTI incidence and describe adult UTIs hospitalized in France, using an algorithm seeking in French hospital discharge databases (HDD)

Methods

- **Historic 5-year cohort of adult patients** (≥18yo) hospitalized with UTIs in France between January 1st, 2014 and December 31st, 2018
- From the **French HDD**, both in public and private healthcare facilities (PMSI-MCO)
- Selection of patients with UTIs using an **HDD algorithm** based on specific ICM-10 diagnostic codes, validated in one French hospital (**PPV 83%**)

Case definition

- Kidney abscess (N151),
- Prostatitis (N410, N412, N413, N418, N419),
- Pyelonephritis (N10, N110, N12, N136),
- Cystitis (N300, N3018, and N309),
- Other urinary infections (N390),
- Device-associated UTIs (T835) with microorganism codes (B95, B96, A40 or A41)

Analyzes

- ➔ The national incidence rate was calculated for overall UTIs, by type and annually
- ➔ The epidemiology of adult UTIs hospitalized in France was described

Discussion

- **First estimation to date of the French UTI incidence in hospitals**, by an HDD algorithm
- **High global incidence rate** ➔ **Burden on the French healthcare system** by number and though cost
- However, cystitis and other unprecise UTIs ranked 1st, representing a wide and various category of symptoms, not allowing further analyzes (overcoding?)

Perspectives

- A **large multicentric validation of the HDD algorithm** is going on to adjust the incidence estimates
- The FURTIHF study would allow testing hypotheses on large historic cohorts with real life, leading to further clinical investigations

Results

- **Incidence rate by year: ~ 900 UTIs/100,000 inhab.**, stable trend over time in females, slightly increasing in males (Fig. 1)

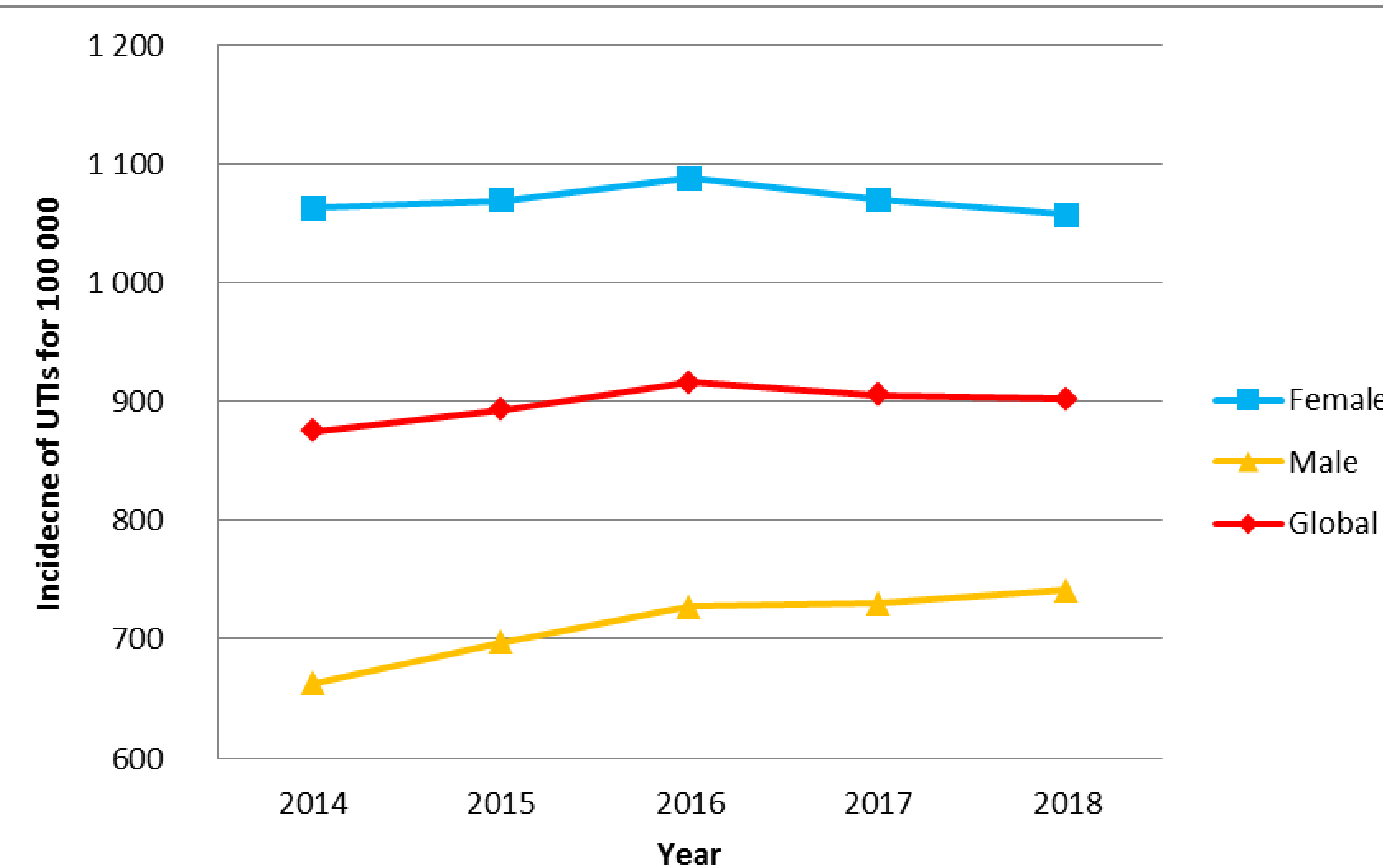


Figure 1: Evolution of UTI incidence, France, 2014-2018

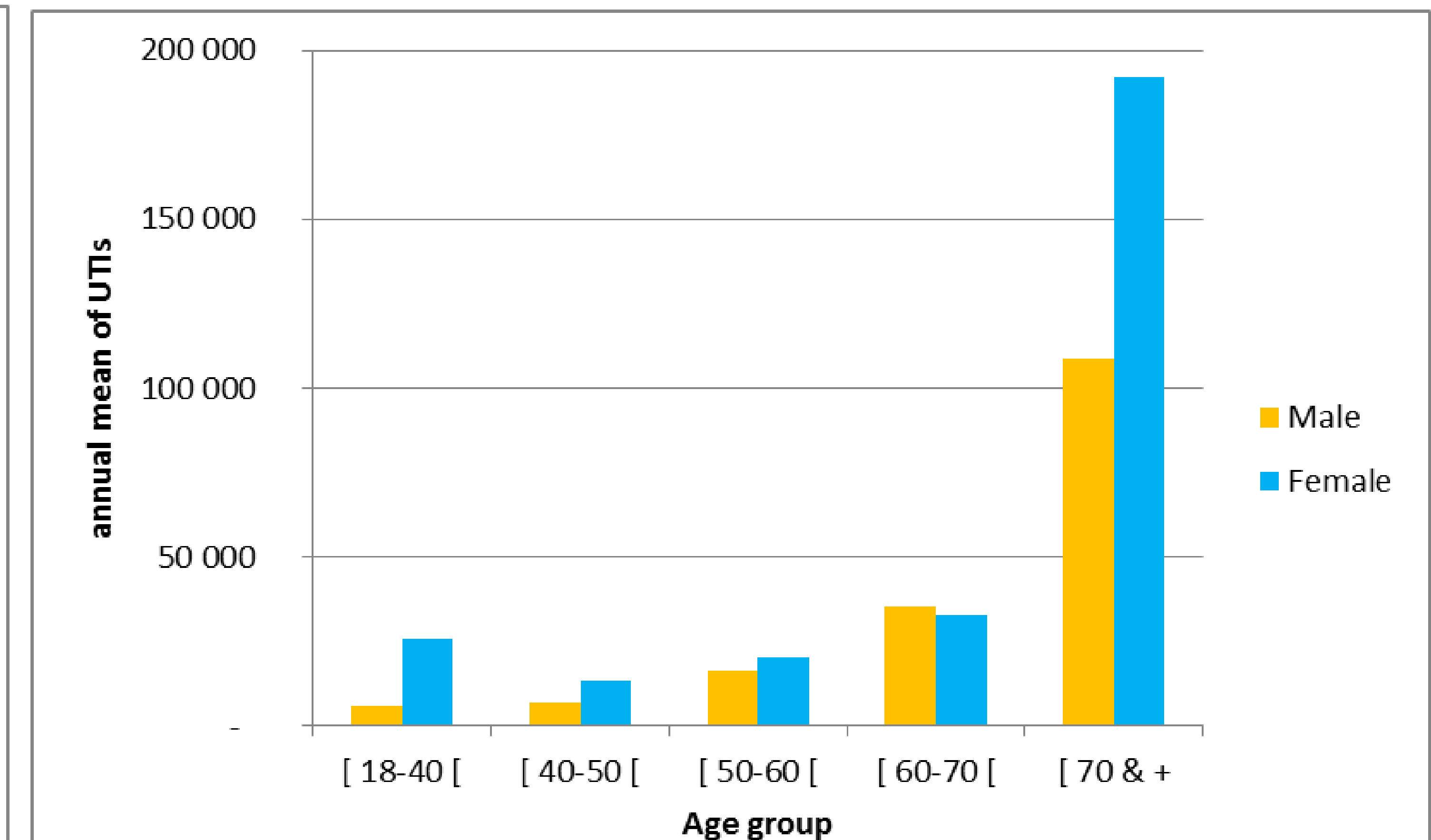


Figure 2: Annual mean number of UTIs by age group, France, 2014-18

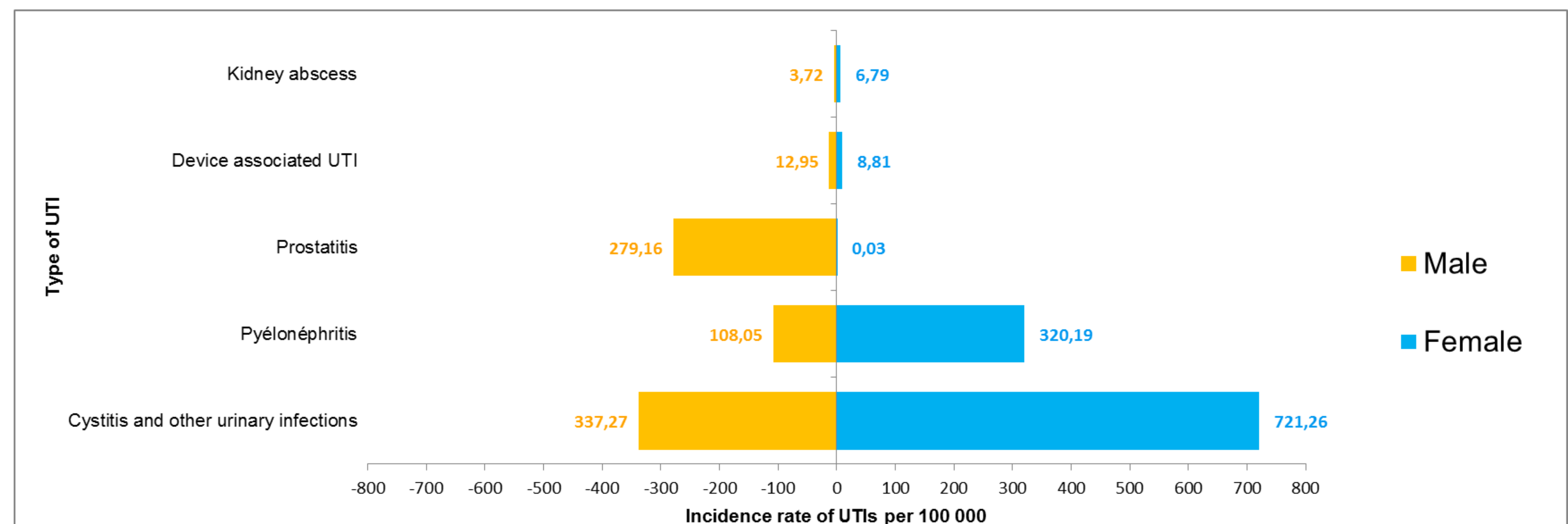


Figure 3: Incidence of UTIs by sex, France, 2018

- If prostatitis is a male infection, all other types of UTIs occurred mainly in females (overall **SR M/F=0.59**) (Table 1, Fig. 3)
- Kidney abscess and device-associated UTI were rare (<10/100,000 inhab, Fig. 3)
- UTIs occurred in patients with frequent comorbid conditions, especially cancer and immunosuppression (Table 1)

Table 1: Baseline Characteristics of UTIs by patients and hospitalizations, France, 2014-2018

		Type of UTIs				
		Cystitis and other urinary infections	Prostatitis	Pyelonephritis	Kidney abscess	Device associated ITUs
Patient characteristics						
Unique patients, N		1,125,056	230,134	414,906	8,893	22,634
Sex, N (%)	Male	345,595 (30.7)	230,098 (100.0)	90,113 (21.7)	2,948 (33.1)	12,510 (55.3)
	Female	779,461 (69.3)	36 (0.0)	324,793 (78.3)	5,945 (66.9)	10,124 (44.7)
Age, N (%)	18-39	53,225 (4.7)	6,072 (2.6)	71,884 (17.3)	2,090 (23.5)	844 (3.7)
	40-49	40,979 (3.6)	9,017 (3.9)	30,257 (7.3)	1,131 (12.7)	873 (3.9)
	50-59	79,683 (7.1)	22,880 (9.9)	38,809 (9.4)	1,372 (15.4)	1,993 (8.8)
	60-69	161,275 (14.3)	48,906 (21.3)	54,861 (13.2)	1,688 (19.0)	4,283 (18.9)
	≥70	789,894 (70.2)	143,259 (62.3)	219,095 (52.8)	2,612 (29.4)	14,641 (64.7)
Comorbid conditions, N (%)	Metabolic disease	299,222 (26.6)	60,257 (26.2)	92,239 (22.2)	1,956 (22.0)	7,088 (31.3)
	Cancer & Chemotherapy	288,388 (25.6)	52,302 (22.7)	77,592 (18.7)	1,759 (19.8)	8,528 (37.7)
	Immunosuppression	156,126 (13.9)	27,327 (11.9)	49,121 (11.8)	1,290 (12.0)	4,139 (18.3)
	Heart failure	128,986 (11.5)	31,844 (13.8)	32,280 (7.8)	591 (6.6)	3,216 (14.2)
	Renal disease	128,109 (11.4)	26,888 (2.4)	49,029 (4.4)	1,608 (0.1)	3,740 (0.3)
	Pulmonary disease	116,542 (10.4)	25,302 (11.0)	29,367 (7.1)	520 (5.8)	2,991 (13.2)
	Stroke	40,071 (3.6)	8,812 (3.8)	11,003 (2.7)	138 (1.6)	908 (4.0)
	Liver disease	36,300 (3.2)	7,507 (3.3)	10,056 (2.4)	284 (3.2)	764 (3.4)
Hospitalization Characteristics						
Total hospitalizations, N		1,431,098	280,543	531,004	11,191	25,768
Episode of infection, N		1,329,404	254,791	467,078	9,332	23,368
Episode by patient, mean		1.18	1.11	1.16	1.05	1.03
length of stay, mean		13.9	12.3	10.4	14.5	19.2
Total readmitted, N		158	20	38	379	618
Total admission to intensive care, N		76,856	14,313	25,221	931	2,961