

# Treatment of uncomplicated urinary tract infection : a retrospective cohort study in women of 18 years and older using pharmacy dispensing data

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**Background** With the change in the guideline of general practitioners for Urinary Tract Infections (UTI) in 2013 for women  $\geq 18$  years the antibiotic fosfomycin became second in choice after nitrofurantoin and changed place with trimethoprim. This study provides insight into the dispensing for uncomplicated UTI to women  $\geq 18$  between 2012 and 2017.

**Purpose** Uncomplicated UTI (=cystitis) is the complaint for which most antibiotics are prescribed in primary care. New ways to decrease the use of antibiotics, also to diminish the risks of antibiotic resistance, are needed.

**Method** Data were available from the Dutch Foundation of Pharmaceutical Statistics (SFK) which collects dispensing data from 95% of community pharmacies. For each year between 2012 and 2017 all prescriptions for women  $\geq 18$  years who used at least one of the first choice UTI drugs (nitrofurantoin, fosfomycin or trimethoprim) were selected with data about first prescriptions, prescribers and concomitant use of antidiabetic drugs. To study patterns of use of UTI drugs, women  $\geq 18$  years with at least one UTI drug in 2012 were followed until 2017. Data were extrapolated to the total population of the Netherlands. Numbers of users, starters and prescriptions from general practitioners (GP) were counted. Data for 2017 were stratified for age category and for use of antidiabetic drugs. In the cohort study the number of patients who received at least one prescription of an UTI drug in the years up to 2017 were counted.

**Findings** The total number of women  $\geq 18$  with UTI drug dispensing increased from 743692 in 2012 to 787214 in 2017. Dispensing for nitrofurantoin and trimethoprim between 2012 and 2017 decreased from 87.4 to 84.4% and from 17.8 to 8.9%, whereas users of fosfomycin increased from 5.4% to 21.8%. Dispensing of fosfomycin in 2017 was associated with age. 13702 Women between 21 and 30 (=11.5%) were dispensed fosfomycin vs 37948 women  $\geq 81$  (=29.2%). Although the guideline advises nitrofurantoin or trimethoprim for diabetes, fosfomycin was frequently prescribed for patients with this comorbidity (27.9%). 171920 women  $\geq 18$  (=55.6%) in the 2012 cohort had recurrent dispensing up to 2017 with varying intervals.

**Conclusion** UTI treatment in women  $\geq 18$  years increased with 5.8% between 2012 and 2017. Second choice treatment changed according to the guidelines to more dispensing of fosfomycin. This was most pronounced for older age categories and the comorbidity diabetes was not always taken into account. The results will be implemented in the design of a project in pharmacy on selfmanagement.