377

Cerruto M A[1], D'Elia C[1], Aloisi A[1], Fabrello M[1], Artibani W[1]
1. *University of Verona*

INCIDENCE AND PREVALENCE OF URINARY INCONTINENCE IN WOMEN IN EUROPE: SYSTEMATIC REVISION OF THE LITERATURE

Hypothesis / aims of study
Urinary Incontinence (UI) is a prevalent, bothersome and costly condition, affecting primarily women. UI is not a lethal condition, but it deeply affects a woman's quality of life. The issue of UI has been well documented and there are national and international networks focusing on the condition. However there is a lack of systematic, reliable and consistent data, particularly with regards to certain sections of the female population. The aim of this study was to perform a systematic synthesis of the published evidence about prevalence and incidence of urinary incontinence (UI) in European women.
Study design, materials and methods
A systematic (and when not possible qualitative) review of the European literature on female UI was carried out, trying to answer the following research question: What are the prevalence and the incidence of Urinary Incontinence in Women in Europe and its specific subtypes? Studies were sought from MEDLINE via PubMed, and manual searches of reference lists from systematic reviews and consensus conferences. Four investigators independently decided on the eligibility of the studies according to recommendations from the Cochrane manual for systematic reviews. An algorithm to define eligibility of the studies was developed.
The investigators reviewed abstracts to exclude all studies in which female UI prevalence and incidence were not clear enough, animal or in vitro experiments, analysis of results taken directly from abstracts, letters, comments, and case reports. The investigators confirmed the eligible target population of European female adults. The epidemiologic studies published in the English, Spanish, French, German, and Italian languages between 2000 and September 2010 were examined to identify studies with eligible outcomes. The investigators included population based studies that examined prevalence and incidence of UI in women in Europe. We included cohort, cross-sectional and case-control studies that examined risk factors for female UI.
Results
We identified 17 studies that investigated the prevalence of any type UI exclusively in European female study populations. They reported prevalence rates to range between 16.1% to 68.8%. The remaining analysed studies investigated UI in both sexes community-living populations, in which was possible to extract female prevalence rate as well. They reported female prevalence rates to range between 13.1% to 70.9%. The most prevalent type of UI was the stress UI (SUI), ranging between 13% and 50% in the former group of analysed studies and between 6.4% and 42.2% in the latter. The number of women included in the former group of studies ranged from 405 to 27936 and in the latter from 227 to 142651. Study populations came from population-based cross-sectional surveys carried out in the following European countries: Austria, Denmark, Finland, France, Germany, Greece, Italy, Norway, Portugal, Spain; Sweden, the Netherlands, the United Kingdom (UK), Turkey. UI was reported across different age groups, varying from specific age groups to a broad age range. Several studies reported the prevalence of different types of UI, including stress, urge and mixed. The methods used to collect data varied widely (postal, telephone and face-to face personal interviews, postal questionnaires, self-completion questionnaires) and only a few studies employed validated questionnaires. UI definition varied widely as well: seven studies clearly used the UI definitions according to the last standardisation of terminology proposed by the International Continence Society (ICS). Six studies investigated UI severity.
We identified 7 studies examined the incidence of UI in Europe. One study used a validated questionnaire (BLUTS) to investigate UI. From a longitudinal population-based study in one primary health care district in Sweden, analysing data from ≥20-year old women in 1991 and 6 years later, the authors showed an overall incidence rate of 21% with a remission rate of 34%. At a 6-year follow-up, re-assessing 240 ≥70-year old ladies, from the 3rd wave of the Tampere longitudinal study of aging initiating in 1979, it was found an overall incidence of urge UI (UUI) and/or mixed UI (MUI) of 17%. Evaluating data from 441 women undergone a free health investigation in 1999 in Austria and reassessed in 2005, it was detected an overall incidence rate of 25.6% (mean annual incidence of 3.9%) and a remission rate of 19% (mean annual remission of 2.9%). A prospective population cohort study conducted in the UK in 12570 middle-aged and older women at baseline and at 1-year follow-up, showed an incidence rate of 3.6% and 4.5% of SUI and MUI respectively. Data coming from the Leicestershire MRC Incontinence study reported a 1-year SUI incidence rate of 8.3%. Results from an ongoing longitudinal cohort study in 2277 aged 40-60 showed an annual incidence of one of more types of UI of 5.8% with a remission rate of 37.7%. Swedish women less than 65 years old, scheduled for a gynaecologic health examination in 1993 were reassessed 5 years later, having a mean annual incidence rate of 2.9% (overall incidence rate of 13.7%) with a mean annual remission rate of 5.9% (overall remission rate of 27.8%).
Interpretation of results
There were many aspects of the identified studies that were dissimilar. These included the age groups; the response rate to the different surveys; the European area investigated; whether the type of UI was specified ad stress, urge, or mixed incontinence; the different questionnaires administered; whether data collection was by postal or self-completion questionnaires, face-to-face interview, computer assisted telephone interview; the time frame at which UI was reported. Most studies used institutionalised questionnaires reported different UI definitions. The validated questionnaire used were: Urogenital Distress Inventory (UDI), International Consultation on Incontinence Questionnaire Short Form (ICIQ-SF), Bristol Female Lower Urinary Tract Symptoms (BLUTS). In the studies that compared the prevalence of UI across different age groups, the prevalence was reported to be lowest in the younger groups, but the differences between estimates for the age groups were estimated statistically only in a few studies.
Concluding message
We found a wide variation in the estimates of the prevalence and incidence of female UI in Europe. The age represents a significant risk factors. Although an under-representation of elderly women, the highest rates of prevalence were shown in this age group. But these findings came from a few studies that formally tested whether the estimates of prevalence in women of different ages were different from each other statistically. The methods used to collect data, as well as the way in which UI was

identified, contributed to the wide variability in findings. Studies of incidence highlighted that UI often may be transient. Our findings support the need for further research to better establish the age-specific prevalence and incidence of UI in Women in different European countries using homogeneous and validated questionnaires in population-based samples in which the issues of selection bias and response rate are carefully considered, in order to obtain comparable results.

Specify source of funding or grant	**Executive Agency for Health and Consumers**
Is this a clinical trial?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**No**
This study did not require ethics committee approval because	**It is a systematic literature review**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**No**