253

Brown S[1], Donath S[1], MacArthur C[2], McDonald E[1], Krastev A[1]
1. *Murdoch Childrens Research Institute,* ***2.*** *University of Birmingham*

URINARY INCONTINENCE IN NULLIPAROUS WOMEN: INCIDENCE AND ASSOCIATED RISK FACTORS

Hypothesis / aims of study

Urinary incontinence is a common condition in pregnancy and the puerperium. While risk factors for postpartum incontinence have been widely studied, few studies have examined factors associated with onset of symptoms in pregnancy.

The aims of this paper are: (1) to investigate urinary symptoms in nulliparous women during early and late pregnancy, and in the 12 months before pregnancy; and (2) to examine the prevalence and incidence of urinary incontinence (UI) during pregnancy and examine risk factors for pre-pregnancy incontinence and incident cases in pregnancy.

Study design, materials and methods

The Maternal Health Study is a multi-centre prospective pregnancy cohort study. 1507 nulliparous women ≤24 weeks' gestation were recruited at six Melbourne public hospitals (April 2003 to December 2005). Recruitment was by mailed invitation, with a response fraction of 21%. Study participants completed a questionnaire at enrolment and telephone interview at 30-32 weeks gestation, with further follow-up at 3, 6, 9, 12, 18 months and 4.5 years after the index (first) birth. Standardised measures were used to assess frequency and severity of stress, urge and mixed UI (1).

Results

Prevalence of urinary incontinence increased from 10.8% in the 12 months before the index pregnancy to 55.9% in the third trimester. Stress incontinence (36.9%) and mixed incontinence (13.1%) were more common during pregnancy than urge incontinence alone (5.9%). There was also an increase in the proportion of women reporting moderate to severe symptoms from 5.5% before the index pregnancy to 29% in the third trimester.

Urinary incontinence before pregnancy was associated with childhood enuresis (Adj OR = 2.4, 95% CI 1.6-3.4), higher pre-pregnant maternal BMI (AdjOR = 2.3, 95% CI 1.4-3.8) and one or more previous miscarriages or terminations (AdjOR = 1.6, 95% CI 1.1-2.3). The strongest predictor of the onset of UI during pregnancy was the presence of sub-clinical symptoms (less than once per month) before pregnancy (AdjOR = 3.6, 95% CI 2.8-4.7). Other factors associated with new UI in pregnancy were higher pre-pregnant maternal BMI and maternal age.

Interpretation of results

To our knowledge this is the first prospective pregnancy cohort study to investigate previous pregnancies (miscarriage and/or terminations) and childhood enuresis as risk factors for urinary incontinence in nulliparous women. The low initial response fraction necessitates some caution in interpreting prevalence estimates, but is unlikely to compromise the validity of aetiological analyses assessing risk factors.

Concluding message

One in ten first time mothers experience UI in the 12 months before pregnancy. Occasional leakage of urine (less than once per month) is also common in nulliparous women, and is a strong predictor of the onset of UI in pregnancy. Childhood enuresis and prior miscarriages and terminations are associated with UI before pregnancy. Higher maternal pre-pregnant BMI is a risk factor for UI both before pregnancy and for the onset during pregnancy

The complex interplay of pre-pregnancy factors (e.g. childhood enuresis, previous pregnancies), pregnancy factors and birth events in the aetiology of postpartum urinary incontinence requires further elucidation to inform primary and secondary intervention strategies.

References

1. Brown S, Lumley J, McDonald E, Krastev A. Maternal health study: a prospective cohort study of nulliparous women recruited in early pregnancy. BMC Pregnancy and Childbirth 2006;6:12

Specify source of funding or grant	**Australian National Health and Medical Research Council (NHMRC) Project Grants, ID191222 and ID344006; VicHealth Public Health Fellowship (2002-2006) and NHMRC Career Award (2008-2010) awarded to Stephanie Brown**
Is this a clinical trial?	**No**
What were the subjects in the study?	**HUMAN**
Was this study approved by an ethics committee?	**Yes**
Specify Name of Ethics Committee	**La Trobe University Human Research Ethics Committee; Royal Women's Hospital Human Research Ethics Committee; Southern Health Human Research Ethics Committee; Angliss Hospital Human Research Ethics Committee; Royal Children's Hospital Human Research Ethics Committee**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**