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URINARY INCONTINENCE IN THE PREGNANCY-PUERPERIUM CYCLE AND RISK FACTORS ASSOCIATED

Hypothesis / aims of study

To evaluate the urinary incontinence (UI) in the pregnancy-puerperium cycle and to verify in which phase of the cycle initiates the UI, the urinary loss characteristics, the types of UI an the association with factors considered of risk.

Study design, materials and methods

This was a transversal and co-relational study carried out throughout the period of august of 2008 to march of 2009 in a Basic Health Unit, in Itapecerica da Serra in the metropolitan region of São Paulo (Brazil). They were interviewed 220 puerperal women who awaited puerperal check-up appointments, child development attendance or vaccination for their children, in the period between 30 to 180 days of postpartum, using a form built and validated for this study.

The criteria for inclusion were being within 30 to 180 days after labor and breast feeding, not using medications that could interfere the lower urinary incontinence system or later vesicular function, and absence of the following comorbidities: mellitus diabetes, renal lithiasis, chronic obstructive pulmonary disease, neurologic diseases, hypertension, urinary system infections and a history of pelvic surgery, except for C-sections.

Results

The UI can occur since the beginning of the pregnancy, being more frequent in the last trimester. It is more frequent in the pregnancy (43.6%) than in the puerperium (10.0%). The majority presented a small loss in the pregnancy as the puerperium, but around 13.0% referred to lose a large volume. The mixed UI was the most frequent type in the pregnancy (20.0%) and the stress UI in the puerperium (4,5%). The frequency of UI in the pregnancy was associates with the increased of maternal age, multiparity, vaginal delivery in previous pregnancy and urine loss occurrence in the previous pregnancy, as shown in Table 1. In the puerperium, the occurrence of UI was associated with the multiparity, actual body mass index (BMI) and UI in the present pregnancy, as shown in Table 2.

As for risk factors associated with urge incontinence in pregnancy, only maternal age were significant (p = 0.0135) with increased risk for women aged 30 to 35 years (PR 4.3, 95% CI 1.2 to 15.9), age ≥ 35 years (RP 6.2, 95% IC 1.4 to 28.2) and the fact they only normal births in previous pregnancies (p = 0.0283; not possible calculate the PR and not the 95% because no women with urge incontinence with the type of delivery). Puerperium, there is no association with risk factors and also no position to calculate the PR and not 95% IC, because of the small sample size.

Interpretation of results

The prevalence of UI in the pregnant-puerperal cycle is high, but is more common in pregnancy, particularly in the last quarter when compared to the postpartum period, which is consistent with other studies (1). Women with a history of urine loss in previous pregnancies showed higher risk of urinary incontinence in pregnancy. In the puerperium, the UI was associated with the presence of UI in the current pregnancy, ie in the last pregnancy. Other studies also found similar results, but only assessed the IUE (2,3).

Among the risk factors associated with UI in pregnancy can be observed that factors previously considered at risk only for SUI, too, are at risk for the MUI and Urge incontinence which shows the need for further studies on the subject.

Concluding message

The UI generally initiated in the end of the gestation and its frequency decreased in the puerperium, the types of UI change according to the phase of the pregnancy-puerperium cycle and the urinary loss generally is small. With the exception of multiparity, risk factors associates to the UI in the pregnancy were not associates to the UI in the puerperium.

Table 1: Factors associated with stress urinary incontinence and mixed in pregnancy – Itapecerica da Serra - SP, August 2008 to March 2009

	Pregnancy									
	Stress Urinary Incontinence					**Mixed Urinary Incontinece**				
Risk Factors	**n UI% (38)**		**PR**	**CI 95%**	***Valor-p***	**n % (44)**	**UI**	**PR**	**CI 95%**	***Value-p***
Age					†					**†**
≤25	17	17,0	1	Referenc	0,0504	17	17,	1	Reference	**0,0007**
26-30	9	31,0	1,8	e		20	0	**2,9**	**1,7 – 5,0**	
30-35	7	30,4	1,8	0,9 – 3,6		16	50,	1,2	0,4 – 3,1	
> 35	5	50,0	2,9	0,8 – 3,8		5	0	2,2	0,8 – 6,0	
				1,4 – 6,2			20,			
							0			
							37,			
							5			

Parity					**‡**				**‡**	
Primípara	11	13,8	1	Reference	**0,0243**	13	15,9	1	Reference	**0,0197**
Multíparity										
2 births	17	32,7	**2,4**			18		**2,1**	**1,1 – 4,0**	
3 births	5	29,4	2,1	**1,2 – 4,6**		7	34,0	**2,3**	**1,1 – 5,0**	
≥ *4 births*	5	38,5	**2,8**	0,8 – 5,3		6	36,8	**2,7**	**1,2 – 6,0**	
				1,1 – 6,7			42,9			
UI in Previous Pregnancy					**‡**				**†**	
No	18	24,7	1	Reference	**0,0012**	19	25,7	1	Reference	**<0,0001**
Yes	9	75,0	**3,0**	**1,8 – 5,1**		12	80,0	3,1	1,9 – 4,9	
Newborn Weight (g)					**‡**				‡	
< 4000	33	21,6	1	Reference	**0,0336**	40	25,0	1	Reference	0,2085
≥ 4000	5	55,6	**2,6**	**1,3 – 5,0**		4	50,0	2,0	0,9 – 4,2	

by † Chi-Square Test or ‡ Fisher Exact Test.

Tabela 2: Factors associated with stress urinary incontinence and mixed in the puerperium - Itapecerica da Serra - SP, August 2008 to March 2009

Risk Factors	**Puerperium**									
	Sress Urinary Incontinence					**Mixed Urinary Incontinence**				
	n UI (10)	**%**	**PR**	**CI 95%**	***Value-p***	**n (6)**	**%**	**PR**	**CI 95%**	***Value-p***
Parity					**†**					**‡**
Primípara	1	1,0	1	Reference	**0,0054**	1	1,0	1	Reference	**0,0467**
Multíparity										
2 births	9	12,7	12,2	1,6 – 93,9		1	1,6	1,5	0,1 – 23,9	
3 birthss	0	0	0	Não Calculável		2	8,3	8,0	0,7 – 84,6	
≥ *4 birthss*	0	0	0	Não Calculável		2	9,5	9,1	0,9 – 96,2	
IU Gestação (es) Anterior (es)					† 0,6543					**‡ 0,0459**
No	7	7,4	1	Reference		2	2,2	1	Reference	
Yes	2	10,0	1,4	0,3 – 6,1		3	14,3	6,4	1,1 – 36,1	
Urine loss in Current Pregnancy					**† 0,0022**					‡ 0,0835
No	1	0,8	1	Reference		1	0,8	1	Reference	
Yes	9	10,2	**12,3**	**1,6 – 95,1**		5	6,0	7,1	0,8 – 60,0	
BMI Puerperium					**†**					†
≤ 25	4	2,8	1	Reference	**0,0352**	4	2,8	1	Reference	0,0718
25.1 - 30	3	6,3	2,2	0,5 – 9,5		0	0,0	0	Not calculable	
> 30	3	16,7	**5,9**	**1,4 – 24,3**		2	11,8	4,2	0,8 -	

Label: UI= urinary incontinence; PR= prevalence ratio; IC= Confidence interval. Value-p calculated by † Chi-square Test or ‡ Fisher Exact Test.

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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	**Ethics Committee of Faculdade Ciências Médicas da Universidade Estadual de Campinas (São Paulo/ Brasil).**
Was the Declaration of Helsinki followed?	**Yes**
Was informed consent obtained from the patients?	**Yes**