

BLADDER CONTROL BEFORE, DURING, AND AFTER PREGNANCY IN PROVEN CONTINENT AND STRESS INCONTINENT WOMEN: ONSET, RESOLUTION, AND PERSISTENCE

Aims of Study

The timing of incontinence symptom onset before, during, and after pregnancy depends on 1) *pre-pregnancy* sphincter competence, 2) *pregnancy* associated hormonally induced changes in the pelvic floor structures and mechanical effects from the fetus, 3) *birth* related pelvic floor injury, and 4) *postpartum* healing success. This study aimed to examine differences between stress incontinent and stress continent postpartum primiparas in the presence of urinary incontinence during the 4 time periods that correspond to these 4 phases.

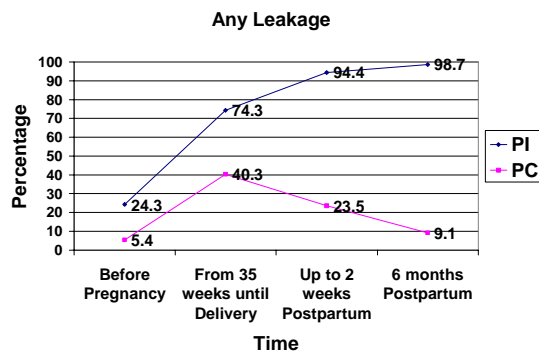
Methods

Two groups of women had been recruited for an IRB approved study of stress incontinence. They were studied 9 to 12 months after delivery; a time when transient pelvic floor changes associated with delivery would have resolved.

Primiparous incontinent (PI) women had urodynamically proven stress incontinence (n=78)

Primiparous continent (PC) proven to be stress continent on urodynamic examination (n=72).

All women had a stress test with 250 cc in the bladder as well as a cystometrogram. Each subject completed a self-administered questionnaire concerning their recall of continence during 4 time periods corresponding to the 4 factors listed above: 1) before pregnancy, 2) from thirty-five weeks until delivery, 3) during the first two weeks postpartum, and 4) up to six months postpartum.



Results

The graph shows the occurrence of symptoms at these time frames. Both continent and incontinent women had an increase in incontinence during pregnancy; more so in those who were destined to remain stress incontinent (74.3%) than in those destined to be continent (40.2%). The Table shows the most common patterns of continence and incontinence symptoms during the 4 time periods. An "I" indicates incontinence at that time and a "C", continence. Sixty-five percent of women destined to be incontinent at 9 months had onset during pregnancy or after delivery. Most had incontinence begin during pregnancy CIII (42.3%), but many had it only after birth CCII (23.1%). Of the women destined to be continent, 34.6% reported pregnancy or delivery associated incontinence (CICC, 20.8%; CCIC, 6.9%; CIIC, 6.9%) that resolved. The most common pattern among continent women was CICC in 20.8%, indicating pregnancy-associated incontinence that resolved. This suggests that a proportion of the CIII women who were symptomatic during pregnancy would be expected to improve if an unrecoverable birth injury had not occurred.

Conclusions

Women who have stress incontinence after their first delivery that has persisted to at least 9 months postpartum recall 3 distinct and different patterns of incontinence onset. One-third of continent women recall experiencing transient incontinence during or after birth that resolves. This implies a complex interaction of sphincter competence, transient hormonal and mechanical factors during pregnancy and variable injury and recovery.

Both continent

Pattern	Any	
	PI	PC
Incontinent at 9 mo.		
I I I I	16.7	0.0
C I I I	42.3	4.2
C C I I	23.1	0.0
CC C I	5.1	1.4
Continent at 9 mo.		
C I C C	0.0	20.8
C C I C	0.0	6.9
C I I C	1.3	6.9
CC C C	1.3	54.2
Other	10.2	5.6

I=incontinent

C=continent

*Note, some women without SUI on exam had occasional symptoms of incontinence and vice versa

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