

# Prevalence and Risk Factors of Double Incontinence in Patients Suffering from Urinary Incontinence and Pelvic Organ Prolapse

## Üriner İnkontinans ve Pelvik Organ Prolapsusu Olan Hastalarda Çift İnkontinansın Prevalansı ve Risk Faktörleri

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**ABSTRACT Objective:** To evaluate the prevalence and sociodemographics of simultaneous anal and urinary incontinence among patients applying to the Urogynecology Unit and related factors. **Material and Methods:** Retrospective analysis of patients applying to İstanbul Medical School Department of Obstetrics and Gynecology Division of Urogynecology between 2002-2011 years with the complaint of urinary incontinence and/or pelvic organ prolapse was performed and those suffering from double (anal+urinary) incontinence were selected and analyzed. Statistical Package for Social Sciences version 21.0 was used for statistical analysis. **Results:** 2518 files were evaluated and 311 patients (12.8%) suffering from double incontinence were selected. 180 (57.2%) suffered from fecal incontinence, and 151 (48.6%) suffered from flatus incontinence. No significant relationship was found between fecal and flatus incontinence and age, type of urinary incontinence, marital state, medical and surgical history, pelvic organ prolapse, number and method of deliveries, history of episiotomy, and baby weight at birth. **Conclusion:** The prevalence of anal incontinence is high among patients suffering from urinary incontinence; therefore the presence of anal incontinence must be questioned among these patients. No significant factors that might lead to anal incontinence were identified in this population. Pregnancy may lead to anal incontinence due to denervation defects apart from episiotomy or method of delivery. Better results can be obtained if the number of patients is increased.

**Key Words:** Urinary incontinence; fecal incontinence

**ÖZET Amaç:** İstanbul Tıp Fakültesi Ürojinekoloji Bilim Dalı'na başvuran, anal ve üriner inkontinans şikayetleri bulunan hastaların prevalansının, sosyodemografik ve klinik faktörlerinin belirlenmesidir. **Gereç ve Yöntemler:** 2002-2011 yılları arasında İstanbul Tıp Fakültesi Kadın Hastalıkları ve Doğum Anabilim Dalı Ürojinekoloji Bilim Dalı'na üriner inkontinans ve/veya pelvik organ prolapsusu şikayeti ile başvuran hastaların dosyası taranarak üriner inkontinans şikayetine ek olarak anal inkontinans şikayeti olan hastaların verileri analiz edildi. İstatistiksel analiz için Statistical Package for Social Sciences Paket Programı 21.0 kullanıldı. **Bulgular:** 2518 dosya tarandı ve çift inkontinansı olan 311 (%12,8) hastanın verileri analiz edildi. 311 hastanın 180'inde (%57,2) fekal inkontinans, 151'inde (%48,6) gaz inkontinansı saptanmıştır. Multivariate regresyon analizinde yaş, inkontinans tipi, medeni durum, hastalık, cerrahi öyküsü, pelvik organ prolapsusu, doğum sayısı ve şekli, epizyotomi varlığı, maksimum bebek ağırlığı ile fekal ve gaz inkontinansı arasında anlamlı bir ilişki bulunamamıştır. **Sonuç:** Üriner inkontinans nedeniyle başvuran hastalarda anal inkontinansın prevalansı yüksektir ve mutlaka sorgulanmalıdır. Analiz edilen grupta anal inkontinans gelişimine neden olabilecek anlamlı bir faktör tespit edilmemiştir. Doğum şeklinden veya epizyotomiden bağımsız olarak gebelik, denervasyon kusurları nedeniyle anal inkontinansa neden olabilir. Ancak hasta sayısı arttırıldığında daha sağlıklı sonuçlar elde edilebilir.

**Anahtar Kelimeler:** Üriner inkontinans; fekal inkontinans

Urinary incontinence (UI) is defined by the International Continence Society as the involuntary leakage of urine and anal incontinence (AI) is defined as uncontrolled passage of fecal material and/or flatus while fecal incontinence (FI) is uncontrolled passage of fecal material only.<sup>1-3</sup> Both AI and UI are associated with adverse effects on the quality of life.<sup>4</sup> The prevalence of AI and FI varies between 2-24% and 0.4-18%, respectively.<sup>2,5</sup> But it is known that both AI and UI are underreported and underdiagnosed in the general population as individuals are often reluctant to report the problem, seek professional help, or see this problem as part of pregnancy or the natural aging process of human.<sup>2,6</sup> On the other hand, health care professionals may not be motivated to investigate these conditions, either.

Although the presence of AI and UI is not a vital risk factor, several studies have reported on its negative impact on the quality of life, resulting in social isolation, reduced self-esteem, and embarrassment.<sup>7,8</sup> Despite similar pathophysiologic mechanisms underlying AI and UI, few studies have been reported on their simultaneous occurrence.<sup>9</sup> The prevalence rates on double incontinence (DI) have been found reaching up to 10.4%.<sup>9-12</sup>

Our aim in this study was to evaluate the prevalence of DI among patients suffering from urinary incontinence with or without pelvic organ prolapse and applying to the urogynecology clinic and determine the socio-demographic (age, educational level) and clinical factors (parity, method of delivery, urogynecologic and rectal surgeries, pelvic organ prolapse, medications, menopausal state, diabetes) predictive of DI.

## MATERIAL AND METHODS

Files of patients applying to Istanbul Medical School Department of Obstetrics and Gynecology Division of Urogynecology with the complaint of urinary incontinence and/or pelvic organ prolapse between 2002 and 2011 years were analyzed retrospectively and files of those suffering from both UI and AI were selected and analyzed.

Socio-demographic data including age, marital state, and education level and clinical data including parity, method of delivery, history of episiotomy, urogynecologic and rectal surgeries, medications, presence of diabetes and other illnesses were analyzed.

Statistical analysis was performed with the computer program IBM Statistical Package for the Social Sciences (SPSS) version 20.0 (SPSS Inc. Chicago, Illinois) by a professional statistician. Data were expressed as mean  $\pm$  standard deviation or as frequency. Univariate and multivariate logistic regression analyses were used to identify the predictive factors of fecal incontinence. A p value  $<0.05$  was considered statistically significant.

## RESULTS

2518 files were analyzed and 311 of those (12.3%) suffering from DI were selected and evaluated. Of the 311 patients, 180 (57.2%) suffered from FI and 151 (48.6%) suffered from flatus incontinence.

The demographic variables of the patients are summarized in Table 1. The mean age of the patients was  $53.8 \pm 12.0$  years. 267 (85.9%) of the patients were married. The mean number of deliveries was  $3.0 \pm 1.6$  and the majority (80.4%) of the patients delivered by vaginal delivery. 16 patients (5.9%) had a history of assisted delivery. 147 patients (47.3%) had a history of an episiotomy. 55 patients (17.7%) suffered from stress UI, 66 patients (21.2%) suffered from urge UI, and 169 patients (54.3%) suffered from mixed UI. 30 patients (9.6%) had pelvic organ prolapse.

The history of illnesses and surgeries of the patients were summarized in Table 2. Forty-four patients (14.1%) had a history of total abdominal hysterectomy, 11 (3.5%) had vaginal hysterectomy, 16 (5.1%) had rectocele repair, 5 (1.6%) had anal fissure repair, 2 (0.6%) had rectal prolapse surgery, and 1 (0.3%) external anal sphincteroplasty.

Univariate and multivariate regression analysis was performed and no significant association between FI and age, marital state, type of incontinence, illnesses, history of urogynecologic and rec-

**TABLE 1:** Demographic variables of the patients.

Anal Incontinence (n=311)	
Age (year)	53.8±12.0 (21-85)
Marital State	
Married	267 (85.9%)
Single	3 (1%)
Divorced	39 (12.5%)
Number of Deliveries	3.0±1.6 (0-10)
Maximum Baby Weight	3827±708 g (2500-6800)
Method of Delivery	
Vaginal Delivery	250 (80.4%)
Cesarean section	31 (9.96%)
Assisted Delivery (Vacuum + Forceps)	16 (5.9%)
Nulliparous	7 (2.3%)
History of episiotomy	
Present	147 (47.3%)
Absent	164 (52.7%)
Urinary Incontinence	
Occult	4 (1.3%)
Stress urinary incontinence	55 (17.7%)
Urge incontinence	66 (21.2%)
Mixed urinary incontinence	169 (54.3%)
Urinary retention	7 (2.6%)
Nocturnal enuresis	8 (2.6%)
Anal incontinence	
Fecal incontinence	180 (57.9%)
Flatus incontinence	151 (48.6%)
Pelvic organ prolapse	
Present	30 (9.6%)
Absent	281 (90.4%)

tal surgeries, pelvic organ prolapse, parity, method of delivery, and baby weight was found. The results are summarized in Table 3.

## DISCUSSION

Our study assessed the prevalence of AI and FI among patients suffering from UI and pelvic organ prolapse. The prevalence of AI was found as 12.3% in this population. FI was more common in this group when compared to flatus incontinence.

The prevalence of AI varies between 2-24% among different studies.<sup>2,5</sup> In a urogynecologic population, the rate of AI ranges between 17% and 54% and women with UI are more likely to have concomitant AI compared to those without UI.<sup>13-16</sup>

The prevalence in our group was lower than that reported in previous studies. This might be due to patients underreporting their symptoms to physicians. Johanson et al reported that only 33% of patients with FI discussed the problem with their physician.<sup>17</sup> In another study, only 17% of women suffering at least monthly from AI discussed the problem with a physician.<sup>18</sup>

In this study, predictive factors related to AI were evaluated, as well. We could not find a statistically significant association between AI and age, number of deliveries, method of delivery, episiotomy, type of incontinence, and pelvic organ prolapse. Raza-Khan et al. assessed the prevalence of anal symptoms in women with UI and pelvic organ prolapse using the Colorectal Anal Distress Inventory questionnaire.<sup>15</sup> The frequency of AI in this population was 54%. Symptoms of UI, pelvic organ prolapse, prior hysterectomy, and prior prolapse repairs were all significantly associated with higher scores in univariate analysis. When evaluated by logistic regression, however, associations with bowel symptoms were lost for all but stress UI, prior hysterectomy, forceps use during delivery, and rectal tear during delivery. They suggested that a common

**TABLE 2:** History of illnesses and surgeries.

Illnesses	n (%)
None	162 (52.1%)
Diabetes	58 (18.7%)
Depression	71 (22.8%)
Cerebrovascular accident	2 (0.6%)
Other neurological states	15 (4.8%)
Asthma	9 (2.9%)
Surgeries	
None	205 (65.9%)
Total abdominal hysterectomy	44 (14.1%)
Vaginal hysterectomy	11 (3.5%)
Cystocele repair	21 (6.8%)
Rectocele repair	16 (5.1%)
Anti-incontinence surgery	5 (1.6%)
Hemoroidectomy	10 (3.2%)
Anal fissure repair	5 (1.6%)
Rectal prolapse surgery	2 (0.6%)
External anal sphincteroplasty	1 (0.3%)
Brain surgery	4 (1.3%)

**TABLE 3:** Multivariate regression analysis for anal incontinence.

Variable	B	p
Age	-0.011 ± 1.024	0.472
Parity	0.210 ± 0.121	0.107
Method of delivery	-0.057 ± 0.056	0.332
Maximum baby weight	0.214 ± 0.852	0.411
Episiotomy	0.320 ± 0.269	0.257
Type of incontinence	-0.058 ± 0.098	0.563
Pelvic organ prolapse	-0.893 ± 0.494	0.096

etiology such as general pelvic floor neuropathy or myopathy resulted in different pelvic floor disorders. Therefore, even though patients may not share their bowel complaints, they should be screened to fully evaluate their pelvic floor disorders.

Our study has some limitations. The primary limitation is the retrospective nature of the study.

Secondly, a validated questionnaire was not used to assess the bowel complaints, but rather self-reported patient symptoms and the physician interview was performed using a non-validated questionnaire. Despite these limitations, this study underlines the prevalence of AI in women suffering from UI and pelvic organ prolapse.

## CONCLUSION

The prevalence of anal incontinence is high among patients suffering from urinary incontinence; therefore the presence of anal incontinence must be questioned among these patients. No significant factors that might lead to anal incontinence were identified in this population. Pregnancy may lead to anal incontinence due to denervation defects apart from episiotomy or method of delivery. Better results can be obtained if the number of patients is increased.

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