

INCIDENCE AND RISK FACTORS FOR FECAL INCONTINENCE IN OLDER MEN AND WOMEN

Hypothesis / aims of study:

Prevalence of fecal incontinence (FI) ranges from 2-24% in community-dwelling older adults; however, data on FI incidence is sparse. Our aims were to examine the incidence of FI in community-dwelling older adults and identify risk factors associated with its development.

Study design, materials and methods:

A population-based, prospective longitudinal study was designed based on a random sample of Medicare beneficiaries aged 65 years and older in the state of Alabama and stratified to include: 50% African Americans (AA), 50% men, and 50% rural participants. In home assessments performed by trained personnel at baseline (2002) and 4 years later (2006) measured self-reported bowel symptoms (diarrhea and constipation), depression (Geriatric Depression Scale), self-rated health, body mass index (BMI) measured in kg/m², and functional status (short physical performance battery). Medical diagnoses were verified by medical record review and used to calculate Charlson co-morbidity scores. Prevalent and incident FI was defined as the loss of control of bowels that occurred in the last year. All participants provided informed consent.

Results:

After 4 years, 624 of the original 1000 participants with a mean age of 78 ± 6 years responded (217 deaths and 159 missing/withdrew). Participants who were dead/missing were older compared to those alive at 4 years (77 vs. 74 years, p<.001), but had no differences in race, baseline FI, or co-morbidity scores. FI prevalence was 12% (120/1000) at baseline and 20% (122/624) at 4 years. Of participants with FI at baseline (n=67), 57% (38/67) had no FI at 4 years (remission). Of participants without FI at baseline (n = 557), 17% (93/557) developed FI (incidence), including 18% of the women and 16% of the men (p = .58). In Table 1, additional gender differences according to continence status at 4 years are presented. White women (22%, 34/155) were more likely (p = .04) to have incident FI than African American women (13%, 18/142). No racial/ethnic differences were seen among the men (n = 260). In multivariable logistic regression analysis controlling for age, BMI, and co-morbidity score (Table 2), significant independent baseline predictors for incident FI in women included: African- America race/ethnicity (protective), depression, chronic diarrhea, and urinary incontinence. The presence of urinary incontinence was the only significant independent predictor for FI in men (Table 2). No differences were seen according to self-rated health, constipation symptoms, or physical performance for incident FI.

Table 1: Sociodemographic Differences in Women and Men with Incident FI at 4 Years

| Variable | WOMEN, n = 297 | | | MEN, n = 260 | | |
|-----------------------------|----------------|-------------|---------|--------------|-------------|---------|
| | Continent | Incident FI | P value | Continent | Incident FI | P value |
| Age, mean ± sd | 78 ± 6 | 78 ± 6 | 0.52 | 77 ± 6 | 77 ± 6 | 0.68 |
| Race/ethnicity, n (%) | | | | | | |
| African-American | 124 (87%) | 18 (13%) | 0.04 | 108 (84%) | 20 (16%) | 0.95 |
| Non-Hispanic White | 121 (78%) | 34 (22%) | | 111 (84%) | 21 (16%) | |
| Living alone, n (%) | 89 (80%) | 23 (20%) | 0.29 | 35 (76%) | 11 (24%) | 0.10 |
| Education, ≥13 years, n (%) | 76 (86%) | 12 (14%) | 0.10 | 70 (80%) | 17 (20%) | 0.67 |
| Rural residence, n (%) | 119 (81%) | 28 (19%) | 0.49 | 108 (89%) | 52 (11%) | 0.07 |

Table 2: Multivariable Logistic Regression Analysis of Risk Factors for Incident FI by Gender

| Variable | WOMEN | | P value | MEN | |
|---------------------------------|------------|---------------------------|---------|------------|---------------------------|
| | Odds Ratio | (95% Confidence Interval) | | Odds Ratio | (95% Confidence Interval) |
| Age | 1.0 | (1.0, 1.1) | 0.80 | 1.0 | (0.9, 1.1) |
| Charlson co-morbidity score | 1.0 | (1.0, 1.1) | 0.40 | 1.1 | (0.9, 1.4) |
| BMI (kg/m ²) | 1.0 | (0.8, 1.3) | 0.21 | 1.0 | (1.0, 1.1) |
| African American race/ethnicity | 0.5 | (0.2, 1.0) | 0.05 | 0.9 | (0.5, 1.8) |
| Depression | 3.2 | (1.1, 9.1) | 0.03 | 1.2 | (0.2, 6.1) |
| Urinary incontinence | 2.0 | (1.0, 3.9) | 0.04 | 2.3 | (1.1, 4.7) |
| Chronic diarrhea | 3.5 | (1.0, 12.5) | 0.04 | 0.9 | (0.1, 1.1) |

Interpretation of results:

FI is common among men and women ≥ 65 years of age with increased prevalence over 4 years. Chronic diarrhea, depression, and urinary incontinence were risk factors for developing FI in women. Racial differences were seen among women, but not men. The only shared risk factor for incident FI in men and women was having urinary incontinence.

Concluding message:

FI and urinary incontinence may share common pathophysiologic mechanisms and both need regular assessment in older adults.

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| <i>Specify source of funding or grant</i> | NIA AG15062 (RA); Veterans Administration RR&D Career Development Award (AM) |
| <i>Is this a clinical trial?</i> | No |
| <i>What were the subjects in the study?</i> | HUMAN |
| <i>Was this study approved by an ethics committee?</i> | Yes |
| <i>Specify Name of Ethics Committee</i> | University of Alabama at Birmingham Institutional Review Board |
| <i>Was the Declaration of Helsinki followed?</i> | Yes |
| <i>Was informed consent obtained from the patients?</i> | Yes |