Pelvic floor conditions in women treated in primary care

Afecciones del piso pélvico en mujeres tratadas en atención primaria

Authors

Dr. Alvaro Paúl Moina Veloz. Professorof Medicine at the Universidad Regional Autónoma de los Andes (UNIANDES Ambato).
Email: ua.alvaromoina@uniandes.edu.ec
https://orcid.org/0000-0002-8050-8562

Dr. Alberto Sánchez Garrido. Professorof Medicine at the Universidad Regional Autónoma de los Andes (UNIANDES Ambato).
Email: ua.albertosanchez@uniandes.edu.ec
https://orcid.org/0000-0002-2418-7020

Dr. Flor Betzabet Morocho Quinchuela. Professorof Medicine at the Universidad Regional Autónoma de los Andes (UNIANDES Ambato).
Email: ua.flormq29l@uniandes.edu.ec
https://orcid.org/0000-0002-4162-9118

Abstract

Introduction: The prevalence of pelvic floor disorders is increasing and health care providers must be prepared to manage these conditions more frequently and effectively
Objective: to develop symptom-based case definitions for pelvic floor disorders.
Methods: A retrospective study was conducted, where a random sample of medical records from 6 rural and urban clinics was remotely reviewed.
Results: Sensitivity was 81.9% (95% CI 75.1-87.2) for urinary incontinence and 61.2% (95% CI 46.2-74.5) for fecal incontinence.
Conclusions: Our case definition for urinary incontinence met our standard of validity and can be used for epidemiologic research.

Keywords: pelvic floor, urinary incontinence, uterine prolapse, primary care source: DeCS
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Resumen

Introducción:La prevalencia de los trastornos del piso pélvico está aumentando y los proveedores de atención médica deben estar preparados para manejar estas afecciones con mayor frecuencia y eficacia
Objetivo: desarrollar definiciones de casos basadas en síntomas para los trastornos del piso pélvico.
Método: Se realizó un estudio retrospectivo, donde se revisó de forma remota una muestra aleatoria de registros médicos de 6 clínicas rurales y urbanas.
Resultados:La sensibilidad fue del 81,9 % (IC 95 % 75,1–87,2) para la incontinencia urinaria y del 61,2 % (IC 95 % 46,2–74,5) para la incontinencia fecal
Conclusiones:Nuestra definición de caso para la incontinencia urinaria cumplió con nuestro estándar de validez y se puede utilizar para la investigación epidemiológica.
Palabras Clave: piso pélvico, incontinenciaurinaria, prolapso uterino, atención primaria
fuente: DeCS

Introduction

Pelvic floor disorders in women, such as urinary or fecal incontinence and prolapse of the pelvic organs (bladder, bowel or uterus) into the vagina, occur when muscles and connective tissue cannot provide sufficient support. Pelvic floor disorders are common and are reported to affect up to 40% of women, with symptoms that can be embarrassing and disabling[(1)]. The prevalence of pelvic floor disorders is increasing due to an aging population with longer life expectancy,[(2)] and health policymakers and health care providers must be prepared to manage these conditions more frequently and effectively as budgets and services have become more constrained. However, the study did not have previously validated methods for estimating the current burden of pelvic floor disorders in primary care that would allow providers or policymakers to predict the types and extent of future demand for services[(3,4)].

The authors wished to investigate the prevalence of pelvic floor disorders in primary care to develop and validate case definitions for pelvic floor disorders in women consulting primary care providers.

Method

A 2-part retrospective study reviewed a random sample of electronic medical records (EMRs) of women aged 18 years or older from 6 rural and urban clinics in the city of Ibarra to validate case definitions for urinary incontinence, fecal incontinence, and pelvic organ prolapse.In addition, they investigated the diagnostic accuracy of the case definition algorithms compared with the reference standard of a detailed review of primary care EMRs. As a result, validated case definitions were available for eight chronic conditions: chronic obstructive pulmonary disease, dementia, depression, diabetes, epilepsy, hypertension, osteoarthritis, and parkinsonism. Definitions were based on combinations of codes in the RME data fields: encounter diagnoses, “problem list,” billing, medications prescribed, referrals made, and physiologic data (such as height, weight, and blood pressure). This study was approved by the Universidad Regional Autónoma de Los Andes (UNIANDES).

Validation of the proposed case definition algorithms tested the accuracy of the algorithms compared with the detailed review of the primary care (reference standard) RME chart. For each of the three conditions (any urinary incontinence, and fecal incontinence, and any pelvic organ prolapse), women were classified as cases if any of the descriptor elements were present anywhere in their RME data and as noncases if the elements were absent.

The estimated sample size for the study was 1000 RME charts. Assuming a sensitivity of 80% for each of the conditions under study and prevalence estimates of 8% for urinary incontinence, 4% for fecal incontinence, and 5% for pelvic organ prolapse, the sample of 1000 charts would guarantee a margin of error for the sensitivity estimate of no more than 15% for any condition and a margin of error of no more than 10% for urinary incontinence.

Stratification was conducted for the validation study, with 10 % of the RME records randomly selected from women younger than 55 years and 90 % randomly selected from women 55 years and older to intentionally inflate the prevalence of pelvic floor disorders. The initial sample of 1050 patients was generated in December 2020, the second sample was generated in February 2021, and the RME record review was completed in June 2021.

The study used simple descriptive statistics to characterize the patient sample. The validity of the case definition algorithms was assessed in terms of sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) with 95% confidence intervals (CI) for each, according to reporting guidelines. The database and statistical processing of the data were performed and analyzed in SPSS 26 statistical software (SPSS Inc., Chicago, IL, USA).

Results

The study performed the final analysis using the medical records of 900 patients from the six primary care medicine clinic sites.

Inter-rater reliability testing showed acceptable agreement among the 3 reviewers for the 3 case definitions: there was substantial agreement for urinary incontinence (κ = 0.76, 95 % CI 0.42-1.00) and excellent agreement for fecal incontinence (κ = 0.81, 95 % CI 0.38-1.00) and pelvic organ prolapse (κ = 1, 95 % CI 1.00-1.00).

Table 1 summarizes the diagnostic accuracy of the 3 case definition algorithms. Sensitivity was 81.9 % (95 % CI 75.1-87.2) for urinary incontinence, 61.2 % (95 % CI 46.2-74.5) for fecal

incontinence and 51.8 % (95 % CI 40,6-62.8) for pelvic organ prolapse, and the specificity was 71.9% (95% CI 68.4-75.1), 99.2% (95% CI 98.2-99.6) and 98.8% (95% CI 97.7-99.4), respectively. The corresponding PPVs were 40.6% (95% CI 35.4-46.0), 81.1% (95% CI 64.3-91.4) and 81.1% (95% CI 67.6-90.1), and NPV 94.4% (95% CI 92.1-96.1), 97.8% (95% CI 96.5-98.6) and 95.3% (95% CI 93.6-96.6).

Table 1. Results of the validation of case definition algorithms for urinary incontinence, fecal incontinence and pelvic organ prolapse.

Case definitionalgorithm; disorder	Table summary			Sensitivity (95% CI)	Specificity (95% CI)	PPV (95% CI)	NPV (95% CI)
	Cases	no cases	Total				
Urinaryincontinence							
Cases		205	345	81,9 (75,1-87,2)	71,9 (68,4-75,1)	40,6 (35,4-46,0)	94,4 (92,1-96,1)
no cases		524	555				
Total		729					
fecal incontinence							
Cases				61,2 (46,2-74,5)	99,2 (98,2-99,6)	81,1 (64,3-91,4)	97,8 (96,5-98,6)
no cases		844	863				
Total		851					
Pelvicorganprolapse							
Cases				51,8 (40,6-62,8)	98,8 (97,7-99,4)	81,1 (67,6-90,1)	95,3 (93,6-96,6)
no cases		807	847				
Total		817					

Source: statistical analysis, p ≤ 0.05, CI = confidence interval, NPV = negative predictive value, PPV = positive predictive value.

The definition of urinary incontinence was valid according to our predefined criteria (> 70% for sensitivity and specificity), so it calculated the prevalence of urinary incontinence in the complete data for women aged 18 years or older. Because of concern about the levels of misclassification suggested by the sensitivity and specificity values, the Rogan-Gladenestimatorwas calculated, which yielded a “true” adjusted prevalence of 2.97%.

The study did not calculate the prevalence of fecal incontinence and pelvic organ prolapse for the complete data because neither of these definitions met our predefined characteristics of validity for epidemiologic purposes. However, they met our predefined validity characteristics for clinical uses such as case findings.

Discussion

With a random selection of primary care patients, our results show that the database can be used to apply complex symptom-based case definitions for pelvic floor disorders (urinary incontinence, fecal incontinence, and pelvic organ prolapse), incorporating a variety of textual and coded items to identify cases for epidemiologic investigation. The high PPV and NPV for the case definitions of fecal incontinence and pelvic organ prolapse suggest their suitability for clinical applications, such as quality improvement, disease registry development, or establishing research cohorts for observational studies[5]. In addition, acceptable sensitivity and specificity values mean that our definition of urinary incontinence can be used to estimate the prevalence of urinary incontinence, bearing in mind that relevant statistical methods may need to be applied[6,7].

In ambulatory care administrative databases studies, investigators used case definitions based solely on ICD-10 billing and diagnosis codes, with no evidence of definitional validity[8,9]. In contrast, our study reports the measurement characteristics of our case definitions.

With the validated case definition for urinary incontinence, the observed prevalence among women was 29.7% (95% CI 29.3-30.0); adjustment for possible misclassification with the Rogan-Gladen estimator yielded an actual prevalence of 2.97%[10]. The true prevalence is likely somewhere between these estimates, calling into question the highest published estimates of urinary incontinence prevalence. The two estimates are below the range of published population prevalence estimates (30 %-60 %), often based on self-reported symptom questionnaires in selected populations[11,12]. The findings reflect the situation of primary care patients who must overcome their discomfort in discussing these issues and consult a primary care provider to be identified as having pelvic floor disorders[13,14].

The study provides a basis for research on the prevalence and treatment of pelvic floor disorders in women and the increasing burden of pelvic floor disorders[15,16]. In addition, this work will help estimate and predict the workload associated with pelvic floor disorders in women, allowing clinics to predict the need for additional staffing for incontinence.

The case definitions can be used to estimate the prevalence of urinary incontinence in other data sets and to develop practice disease registries for managing fecal incontinence and pelvic organ prolapse. These uses are particularly valuable as the population ages and health care planners prepare for an increasing number of older women, the consequent increase in the need for care for pelvic floor disorders. However, symptom-based case definitions tend to be complex: our case definitions underwent rigorous review and our results provide a strong case for validating case definitions prior to their application in research[17,18].

It was difficult to develop case definitions for pelvic floor disorders because RME data entry is not standardized and symptoms may be recorded in various parts of the RME chart. In addition, patient symptoms may not be reported compared to clearly defined physiologic measures, such as blood pressure for hypertension, hemoglobin A1C level for diabetes, or specific drugs[19,20]. Therefore, the research explored a report of a pelvic floor disorder; this definition could be refined to look at other time frames, such as “within the past year,” as needed for other research purposes.

Conclusion

The case definition for urinary incontinence met our standard of validity (sensitivity and specificity > 70%) and can be used for epidemiological research. In addition, high PPVs for the case definitions of fecal incontinence and pelvic organ prolapse mean that these definitions can be used in applications such as quality improvement studies, cohort studies, and disease registry creation.

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