



Contents lists available at ScienceDirect

Taiwanese Journal of Obstetrics & Gynecology

journal homepage: www.tjog-online.com

Original Article

Decreasing trend of hysterectomy in Taiwan: A population-based study, 1997–2010

Jerry Cheng-Yen Lai^a, Nicole Huang^{b, c}, Sheng-Miauh Huang^d, Hsiao-Yun Hu^{a, c}, Chien-Wei Wang^e, Yiing-Jenq Chou^{a, *}, Kung-Liahng Wang^{f, g, h, **}^a Institute of Public Health and Department of Public Health, School of Medicine, National Yang-Ming University, Taipei, Taiwan^b Institute of Hospital and Health Care Administration, School of Medicine, National Yang-Ming University, Taipei, Taiwan^c Department of Education and Research, Taipei City Hospital, Taipei, Taiwan^d Department of Nursing, Mackay Medical College, New Taipei City, Taiwan^e Department of Medicine, Medical University of Lublin, Lublin, Poland^f Department of Nursing, Mackay Junior College of Medicine, Nursing, and Management, Taipei, Taiwan^g Department of Obstetrics and Gynecology, Mackay Memorial Hospital and Mackay Medical College, Taipei, Taiwan^h Department of Obstetrics and Gynecology, Taipei Medical University, Taipei, Taiwan

ARTICLE INFO

Article history:
Accepted 13 August 2014

Keywords:
hysterectomy
leiomyoma
population surveillance
Taiwan
trends

ABSTRACT

Objective: Gynecologists in Taiwan are lacking a comprehensive picture of the changes in clinical practice and indications of hysterectomy over a long period of time. The aims of this study were to examine the national trends in the utilization of hysterectomy and to explore changes in its utilization rate over a 14-year period from 1997 to 2010.

Materials and methods: We conducted a population-based trend analysis using the claims data from the Taiwan's National Health Insurance program.

Results: We identified a total of 341,993 women aged 20 years or older who underwent hysterectomy between 1997 and 2010. The total number of hysterectomies increased from 22,961 in 1997 to 27,757 cases in 1999, followed by a decline to 22,351 in 2010. Overall, 5406 fewer hysterectomies (−19.5%) were performed in 2010 when compared with those performed in 1999. The number of hysterectomies performed decreased from 1997 to 2010 for precancerous lesions (−55.6%), chronic pelvic pain (−35.2%), uterine leiomyoma (−13.1%), and uterine prolapse (−7.2%). However, the utilization of hysterectomy increased for endometriosis (+76.3%) and gynecologic cancer (+22.7%) during the same time frame.

Conclusion: The clinical utilization and primary indications of hysterectomy changed substantially in Taiwan from 1997 to 2010. The continued monitoring of changes in hysterectomy rates will be critical for understanding the appropriate indications for hysterectomy and oophorectomy, the emergence of alternative managements for uterine disorders, and future trends in women's reproductive health.

Copyright © 2015, Taiwan Association of Obstetrics & Gynecology. Published by Elsevier Taiwan LLC. All rights reserved.

Introduction

Hysterectomy is now a very-well established procedure with a relatively low mortality of 12 per 10,000 [1]. Most hysterectomies

are elective and have been recommended for many clinical indications, including uterine leiomyoma, abnormal uterine bleeding, endometriosis, and reproductive cancers (endometrial, cervical, ovarian, or tubal cancers) [2]. Over the past decades, however, the practice patterns of hysterectomy have changed significantly in many countries, including the United States [3] and Taiwan [4]. Surgical procedures, such as uterine-artery embolization and endometrial ablative therapy, have been introduced in place of hysterectomy for the management of uterine leiomyoma [5] and abnormal uterine bleeding [6], respectively. Many medications are now available for endometriosis-related pain, including combined oral contraceptive pills, gonadotropin-releasing-hormone agonists,

* Corresponding author. Y.J. Chou, Institute of Public Health and Department of Public Health, School of Medicine, National Yang-Ming University, Room 201, The Medical Building II, Number 155, Section 2, Li-Nong Street, Taipei 112, Taiwan.

** Corresponding author. K.L. Wang, Mackay Memorial Hospital, Taitung Branch, Number 1, Lane 303, Changsha Street, Taitung City 95054, Taiwan.

E-mail addresses: yjchou@ym.edu.tw (Y.-J. Chou), KL421229@ms6.hinet.net (K.-L. Wang).

tranexamic acid, nonsteroidal anti-inflammatory drugs, progestins, and androgen derivatives, such as danazol, and levonorgestrel intrauterine system [7]. There is also an increasing utilization of fertility-conserving procedures for young women with genital tract malignancies [8,9]. In addition, the minimal invasive approach of laparoscopic surgery has become a popular alternative globally, which offers significantly more benefits than the conventional abdominal and vaginal hysterectomies in the management of gynecological indications [10]. Although previous reports have included some information on the hysterectomy trend [4,11,12], gynecologists in Taiwan are lacking a comprehensive picture of the changes in clinical practice and indications of hysterectomy over a long period of time. The aims of this study were to examine the trends in the utilization of hysterectomy, and to explore changes in utilization rate, surgical routes, primary indications, and oophorectomy rate over a 14-year period from 1997 to 2010 in Taiwan.

Materials and methods

Our main data source was the National Health Insurance Research Database (NHIRD). The NHIRD is a public-released population-based data set, which contains registration files and original administrative-claim records filed for reimbursement by all beneficiaries covered under Taiwan's National Health Insurance (NHI) program [13]. The NHI program is a universal, single-payer insurance program for all civilian residents in Taiwan since 1995. We used the 1997–2010 NHI enrollment files, NHI inpatient files, the medical-personnel registries, and the hospital registries. The NHI enrollment files contain basic sociodemographic information (age, sex, birth date, payroll-related insurance premium, and area zip code of enrollment location). The NHI inpatient files contain disease diagnoses and surgical/diagnostic/therapeutic procedures for each inpatient admission claims. The medical-personnel registries contain the physicians' demographic data and specialties. The hospital registries contain the characteristics of practice setting, such as accreditation level and ownership. A double-scrambled unique identifier is encrypted for each patient, physician, and practice setting before releasing for research purposes. This research was approved by the Institutional Review Board of the National Yang-Ming University in Taiwan (No. 10000111).

We conducted a population-based trend analysis. A total of 343,115 women undergoing hysterectomy were initially identified from the inpatient admission claims between January 1, 1997 and December 31, 2010, using the following International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) procedure codes: subtotal abdominal hysterectomy (68.3), total abdominal hysterectomy (68.4), vaginal hysterectomy (68.5), radical abdominal hysterectomy (68.6), radical vaginal hysterectomy (68.7), and unspecified hysterectomy (68.9). The laparoscopic-assisted vaginal hysterectomy (68.51) and any hysterectomy in the presence of secondary procedure code 54.21 within the same inpatient admission claims were considered as laparoscopic-assisted hysterectomy. Since hysterectomy was rarely performed in women younger than 20 years, these women accounted for <1% of the entire cohort ($n = 371$), and were excluded from this study. For the purpose of this study, the unspecified hysterectomies (68.9) were excluded from this study, which contained <1% of the entire cohort ($n = 751$). In aggregate, the study cohort consisted of 341,993 women who underwent hysterectomy between 1997 and 2010. Although no values were missing for the women's ages, comorbidities, indications for surgery, or surgical procedures, at least 5% of the selected cohort lacked information necessary for the calculation of socioeconomic status (SES) and residential urbanicity in the NHI enrollment files.

Both women and physician characteristics were broadly classified into abdominal (subtotal or total), vaginal, radical, or laparoscopic-assisted hysterectomy. The women's characteristics, including age, SES and residential urbanicity, comorbidity, indications for surgery, concomitant salpingo-oophorectomy, and hysterectomy types, were defined as the values at the index year. The women were classified into six age groups according to their age at hysterectomy, from 20–39 years to 80 years or older, and four 10-year age groups in between (40–49, 50–59, 60–69, and 70–79 years). SES was classified into four categories according to the payroll-related insurance premium for women with well-defined monthly wage, head tax for those without a well-defined monthly wage, or other adults (mostly parents in the case of dependents): (1) without a well-defined monthly wage (union and association members, such as farmers, fishermen, professional workers, veterans, and local-government enrollees); (2) low-income [less than new Taiwan dollar (NTD) 20,000 or United States dollar (USD) 667] or certified low-income (mostly unemployed) individuals enrolled in the NHI through local-government offices; (3) middle income (NTD 20,000–39,999, or USD 667–1333); and (4) high income (more than NTD 40,000 or USD 1333) (30 NTD = 1 USD, in May 2014). Women's residential urbanicity was defined according to Liu et al [14]: urban classification for metropolitan cities, sub-urban classification for all other cities and counties, and rural classification for all townships and rural areas. The Romano adaptation of the Charlson comorbidity index was used for risk assessment based on at least one inpatient claim filed within 1 year to 1 month prior to the index admission [15,16]. Diseases with the following primary-diagnosis codes of hysterectomy admission claims were also included in the analysis: gynecologic cancer (179–184), uterine leiomyoma (218), endometriosis (617), uterine prolapse (618), precancerous lesions (233), pelvic infection (614–616), chronic pelvic pain (625), benign neoplasm of ovary (220), and benign neoplasm of corpus uteri (219.1). The remaining indications were placed under the “others” category. Women with concomitant oophorectomy were classified according to the ICD-9-CM codes within the same inpatient admission claims of hysterectomy into unilateral salpingo-oophorectomy (65.4) or bilateral salpingo-oophorectomy (BSO) (also includes second unilateral salpingo-oophorectomy) (65.6). Each hysterectomy type was further stratified into a total or subtotal procedure.

The physician characteristics included the physician's age, sex, total hysterectomy case volume, and attributes of physician-practice setting (hospital location by region, accreditation level, and institution ownership). The physician's age was classified into one of four age categories: <35, 35–44, 45–54, and 55 years or more. The total hysterectomy case volume was defined as the total number of hysterectomy performed by a physician between January 1, 1997 and December 31, 2010. Low-volume physicians were defined as those who performed <50 hysterectomies in the study period of 14 years, the middle-volume physicians were those who performed between 50 and 249 hysterectomies, and the high-volume physicians as those who performed 250 hysterectomies or more. The hospital location where the services were delivered was classified into four geographic locations: northern, central, southern, or eastern regions of Taiwan. All medical providers were classified into four levels as accredited by the Taiwan Joint Commission on Hospital Accreditation: medical center, regional hospital, district hospital, or clinics [17]. Institution ownership was classified as private or public (government-owned) medical institutions.

The mean (standard deviations) and frequency (%) were presented for continuous variables and categorical variables, respectively. The dissimilarities in women and physician

Download English Version:

<https://daneshyari.com/en/article/3975469>

Download Persian Version:

<https://daneshyari.com/article/3975469>

[Daneshyari.com](https://daneshyari.com)