



Full length article

Hysterectomies in Portugal (2000–2014): What has changed?☆



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ABSTRACT

Objective: To describe conditions regarding hysterectomies during the past 15 years in Portugal.

Study design: Nationwide retrospective study of women who underwent hysterectomy in Portuguese public hospitals in the period between 2000 and 2014. Patient data regarding hospital codes, geography, patient age, indications, operative techniques, associated procedures, complications, admission dates, discharge dates and 30-day postoperative readmissions were extracted from the national database with information regarding all public hospitals in Portugal. For calculation of hysterectomy rates, the total number of women was found using the Statistics Portugal website. Data were analysed using STATA version 13.1.

Results: A total of 166 177 hysterectomies were performed between 2000 and 2014 in public hospitals in Portugal. The overall rate of hysterectomy decreased 19.3% (from 212/100 000 to 171/100 000 women per year). The average age of women at time of hysterectomy increased from 51.6 ± 11.4 to 55.2 ± 12.3 years ($p < 0.001$). There was an increase in laparoscopic [1.2%–9.5%, $p < 0.001$] and vaginal route [13.3%–21.2%, $p < 0.001$], with a consequent decrease in laparotomic route [85.5%–69.1%, $p < 0.001$]. There was a change in the pattern of indications for hysterectomy; however, uterine fibroids remain the major indication for hysterectomy [45.3%–37.6%, $p < 0.001$]. In women with hysterectomy for benign pathology, the rate of bilateral adnexectomy decreased from 71.0% to 51.9% ($p < 0.001$) and the rate of bilateral salpingectomy increased from 1.0% to 15.1% ($p < 0.001$). The mean number of hospitalization days decreased from 7.1 ± 6.1 (in 2000–2004) to 5.4 ± 5.0 (in 2010–2014) ($p < 0.001$). Globally, the rate of complications increased from 3.3% in 2000–2004 to 3.6% in 2010–2014 ($p < 0.01$).

Conclusion: In Portugal, the rate of hysterectomies decreased in the last 15 years with an increase in age at the time of the procedure and a change towards less invasive routes. Uterine fibroids remain the major indication for hysterectomy. Additionally, we noted a significant shift towards more concomitant bilateral salpingectomy (and less bilateral adnexectomy) during hysterectomy for benign indications, according to the evidence suggesting the fallopian tube as the origin of ovarian cancer.

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Introduction

Although hysterectomy rates have decreased in some countries in the last decades, it is still the most common gynaecological major procedure in developed countries [1–6].

Hysterectomy is the definitive treatment for conditions such as leiomyomas, abnormal uterine bleeding and uterine prolapse.

Nevertheless, in women with benign pathology, several alternatives to hysterectomy have emerged in the last decades [7–9].

Cochrane meta-analysis recommended vaginal hysterectomy as the primary technique for benign pathology. When it is not feasible, laparoscopic hysterectomy may avoid the need for laparotomy. Ultimately, the surgical approach to hysterectomy should be decided by the woman together with her surgeon [10]. Along with these recommendations, the rate of laparotomic hysterectomies fell in many countries [2,4–6,11,12]. This trend towards the use of more minimally invasive techniques results in shorter recovery time, fewer infections, and fewer hospitalization days [2,10,11,13].

There is growing evidence that in premenopausal women younger than 50 years of age, bilateral oophorectomy at the time of

☆ The study was conducted in Portugal (nationwide).

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hysterectomy may impact negatively on cardiovascular health and all causes of mortality [14–16]. Moreover, recent studies suggest that high-grade serous ovarian cancer arises predominantly within the fallopian tubes and that removal of the fallopian tubes is an effective preventive strategy to reduce the risk of ovarian cancer in the population in general [17–19]. Therefore, prophylactic bilateral salpingectomy with ovarian preservation should be considered in premenopausal women who require hysterectomy for benign conditions [20–22].

The aim of this study is to describe hysterectomy rates, patient age, indications, surgical techniques, concomitant adnexal surgery rates, hospitalization days and regional differences during the past 15 years (2000–2014), regarding hysterectomies in Portugal.

Material and methods

A population-based register retrospective study of women who underwent hysterectomy in Portuguese public hospitals, in the period between January 1, 2000 and December 31, 2014.

The Central Administration of the Portuguese Health System – *Administração Central do Sistema de Saúde* (ACSS) – approved the study and provided the data. The database is blinded relatively to the patients' identifications in order to disable investigators from identifying the subjects and to maintain anonymity. All clinical investigations were conducted according to the principles expressed in the Declaration of Helsinki.

After approval from the Central Administration of the Portuguese Health System, patient data regarding hospital codes, geography, patient age, indications, operative techniques, associated procedures, complications, admission dates, discharge dates and 30-day postoperative readmissions were extracted from the national database of ACSS. This national database has information regarding all public hospitals in Portugal.

The hysterectomies were divided into three groups, based on the International Classification of Diseases, 9th Revision, Clinical Modification (ICD-9-CM): laparotomic (683, 6839, 684, 6849, 686, 6869, 689), vaginal (685, 6859, 687, 6879) and laparoscopic (including laparoscopy-assisted vaginal hysterectomy) (6831, 6841, 6851, 6861).

Concomitant procedures performed at the time of hysterectomy were analysed based on ICD-9-CM coding and included bilateral adnexectomy and bilateral salpingectomy.

Age was classified as less than 40, 40–49, 50–59, 60–69, and 70 or more years of age.

Each of the following primary indications for surgery was examined, based on ICD-9-CM coding: leiomyoma, endometrial polyp, endometrial hyperplasia, adenomyosis, abnormal uterine bleeding, endometriosis, benign ovarian neoplasms, uterine prolapse (complete or incomplete), endometrial cancer, cervical cancer and ovarian cancer. We divided the primary indications for hysterectomy into three major categories: benign pathology (leiomyoma, endometrial polyp, endometrial hyperplasia, adenomyosis, abnormal uterine bleeding, endometriosis, benign ovarian neoplasms), uterine prolapse (complete or incomplete) and malignant pathology (endometrial cancer, cervical cancer and ovarian cancer).

Complications were analysed based on ICD-9-CM coding and divided into intraoperative complications (E8700) and postoperative complications directly related to surgical procedure (E8786, E8788, E8789).

Hospitals were divided into five geographical continental areas of Portugal: North Region, Central Region, Capital Region, Alentejo Region and Algarve Region. The islands were not included in this division. All regions except the Alentejo Region have a medical school with university hospital.

Hysterectomy rates were calculated as number of hysterectomies per 100 000 women per year. The total number of women (in Portugal and in each area of Portugal, per year) was found using the Statistics Portugal website (www.ine.pt).

Categorical data were analysed by the χ^2 test and the means of continuous variables were analysed with Student's *t*-test. Logistic regression was used to calculate odds ratios (OR) and 95% confidence intervals. Statistical significance was set at $p < 0.05$. All calculations were performed with the STATA version 13.1 software.

Results

A total of 166 177 hysterectomies were performed in the past 15 years in public hospitals in Portugal. The overall rate of hysterectomy decreased from 212/100 000 women per year to 171/100 000 women per year (Fig. 1), which means a reduction of 19.3% in the rate of hysterectomies from 2000 to 2014 in Portugal. The rate of abdominal hysterectomy presented a major reduction from 181/100 000 women per year in 2000 to 118/100 000 women per year in 2014 (Fig. 1). Vaginal hysterectomy had been at a relatively stable rate around 35–37/100 000 women per year since 2005 (Fig. 1). The rate of laparoscopic hysterectomy was under 10/100 000 women years until 2008, when it started to slowly increase, reaching 16/100 000 woman years in 2014 (Fig. 1).

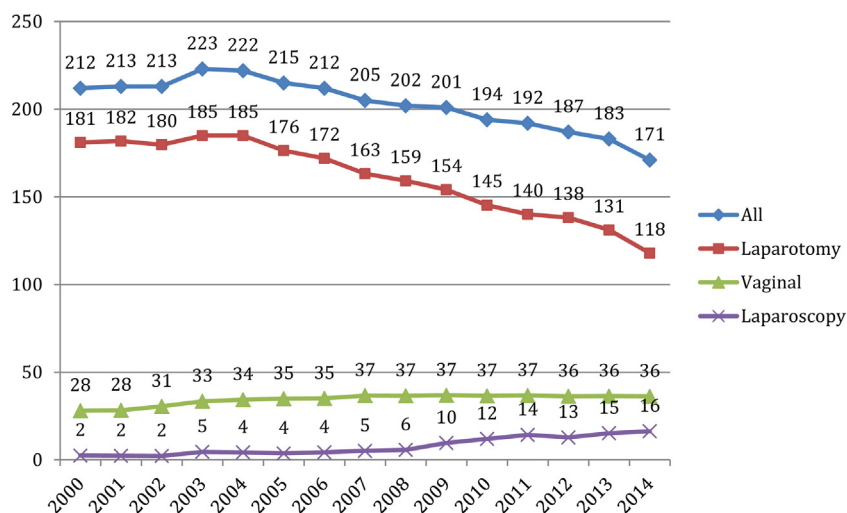


Fig. 1. Number of hysterectomies per 100 000 women/year in Portugal.

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