Use of National Healthcare Information Databases to Assess Sex Differences in Patient Care in Spain: The Case of Asthma (2017-2020)

Óscar Martínez-Pérez[1], Monica Forghani[1], Sergio Sánchez-Ruíz[1], Mónica Cerezales[2]

[1] Axentiva Solutions SL, Barcelona, Spain; [2] Axentiva Solutions SL, Oviedo, Spain

#EPH202

Background and Objectives

Research within diverse clinical specialities points out to the differences according to sex and gender regarding patient care in terms of clinical manifestations of the disease, diagnostic, access to healthcare and interventions[1,2]. All these differences may lead to healthcare inequities. The objective of this study was to characterize patient care for asthma patients in Primary Care (PC) and Secondary Care (SC) settings, in Spain, through a sex lens in terms of comorbidities, PC visits, procedures, referral, and hospitalization.

Methodology

For PC, we used the Clinical Database (BDCAP) of the National Health System[3]. It collects standardized clinical information annually from a random representative sample (≈10%) of the medical records of the population. For SC, we used the Minimum Basic Data Set (RAE-CMBD)[4] which collects clinical-administrative records annually from all Spanish hospitals. In both databases, we analyzed differences by sex in asthma management for individuals ≥15 years from 2017 to 2020. Rates per 100,000 inhabitants were adjusted by age and year according to the Spanish National Statistics Institute. Rate ratios (RR) and 95%CIs were calculated to ensure a significant difference by sex.

Results

Standardized rates (/100,000 population) were higher in women than in men in all the studied variables: PC visits (general practice or nursery) 95,083 vs 46,402; comorbidities 6,491 vs 5,033; procedures 50,996 vs 25,251; referral to other medical specialties 3,702 vs 1,798; and hospitalizations with asthma as main diagnosis 702 vs 309 (Figure 1).

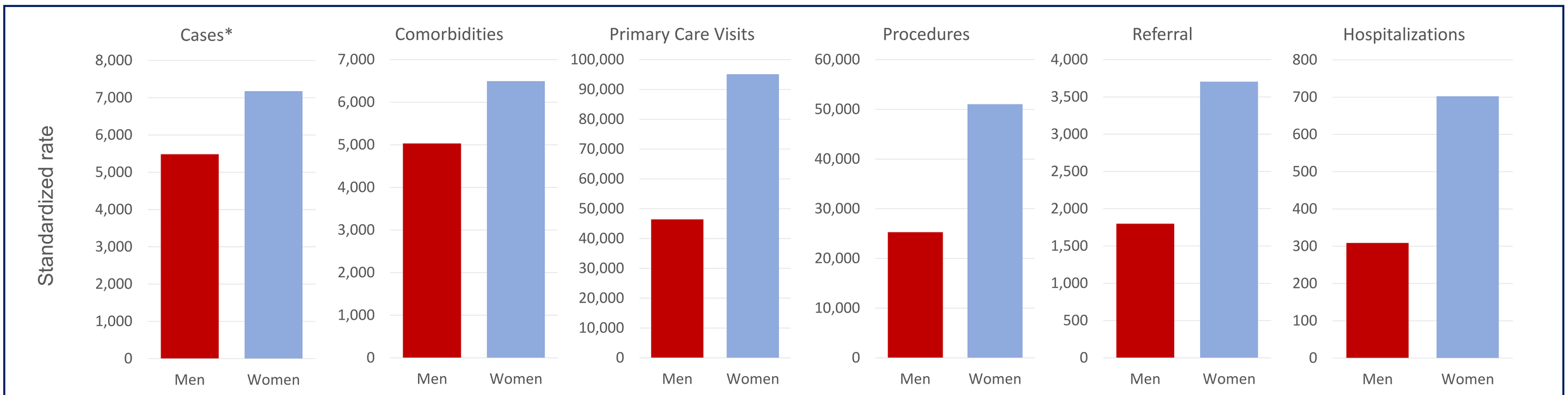

Figure 1. Standardized rates of variables related to primary and specialized care of asthma patients by sex.

**Cases do not correspond to single patients but to any contact of a patient with the healthcare system for any reason.*

Overall, 30% more women than men were followed up in PC for asthma (RR 1.308; 95%CI 1.307-1.309) (Figure 2). Women had more comorbidities (RR 1.289; 95%CI 1.288-1.291) and were exposed to more PC visits (RR 2.049; 95%CI 2.048-2.050) and procedures (RR 2.019; 95%CI 2.019-2.020). A higher proportion of women were derived to SC (RR 2.059; 95%CI 2.057-2.061) (Figure 2). Finally, women were at least twice as likely to be hospitalized (RR 2.273; 95% CI 2.263- 2.282) than men (Figure 2).

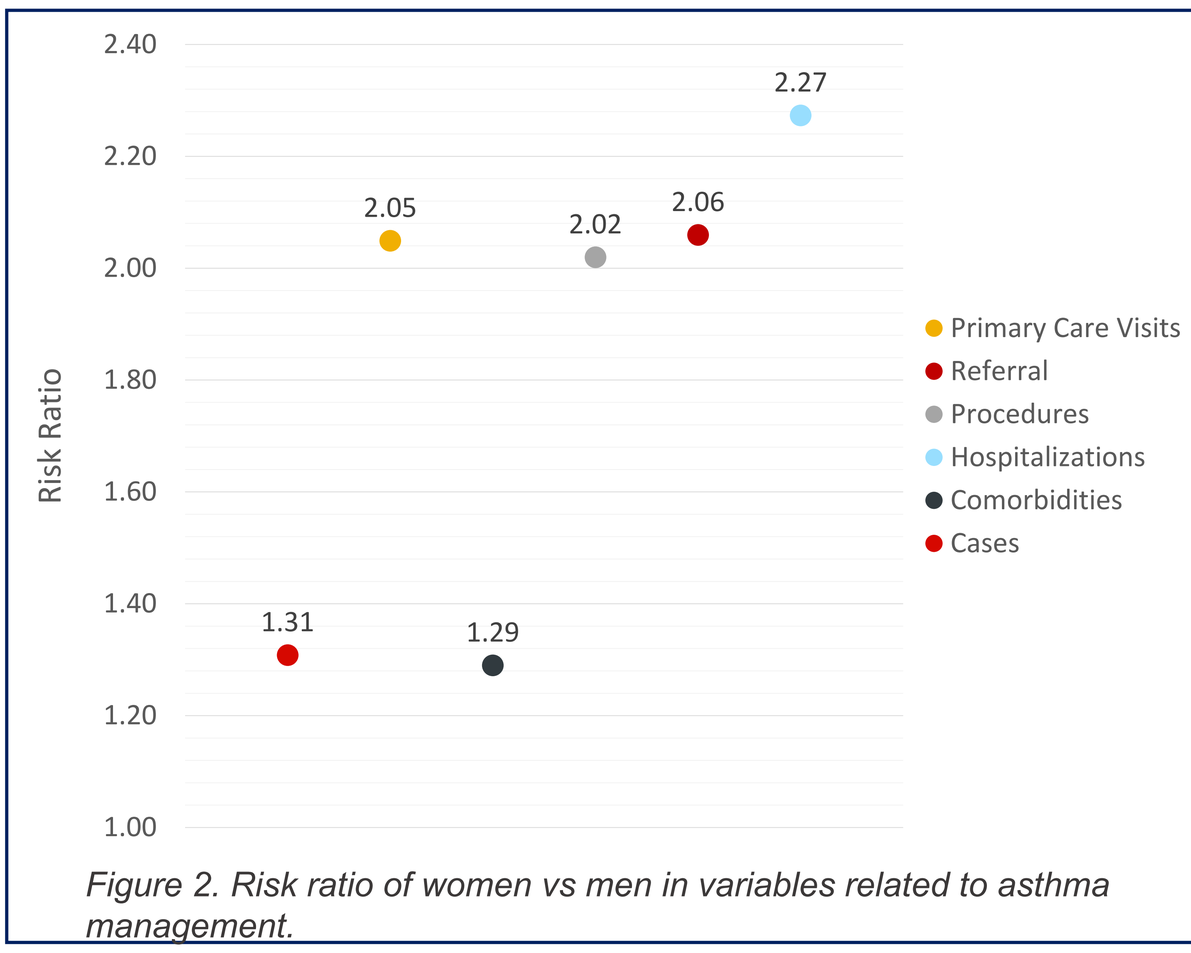

Figure 2. Risk ratio of women vs men in variables related to asthma management.

Conclusions

Findings are aligned with published prevalence data by sex which show a higher prevalence of asthma in adult women. In our analysis, the sex differences in the rate of PC visits, procedures, derivations to SC, and hospitalizations was higher than the sex differences in the number of patients being followed up in PC and their comorbidities (cases and comorbidities). This could be indicative of sex-specific severity and/or potential suboptimal sex-specific management, however, considering the database's nature, this cannot be directly linked. Further evolution in the healthcare information system is needed to be able to assess meaningful correlations between PC and SC to optimize derivations and care in Spain.

1, Vogel *et al*. The Lancet. 2021;397:2358-2438.
2, Mauvais-Jarvis *et al*. The Lancet. 2020;396:565-582.
3, Base de Datos Clínicos de Atención Primaria-BDCAP, https://www.sanidad.gob.es/estadEstudios/estadisticas/estadisticas/estMinisterio/SIAP/home.htm
4, Registro de Actividad de Atención Especializada-RAE-CMBD, https://www.sanidad.gob.es/estadEstudios/estadisticas/cmbdhome.htm

omartinez@axentiva.com