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Chen I C[1], Lee M H[1], Chen W C[1], Chang K M[1]
1. *Feng Yuan Hospital*

EPIDEMIOLOGIC COHORT STUDY OF SOMATIC SYMPTOM DISORDER AND INTERSTITIAL CYSTITIS / BLADDER PAIN SYNDROME: BEYOND THE EFFECT OF ANXIETY AND DEPRESSION

Hypothesis / aims of study

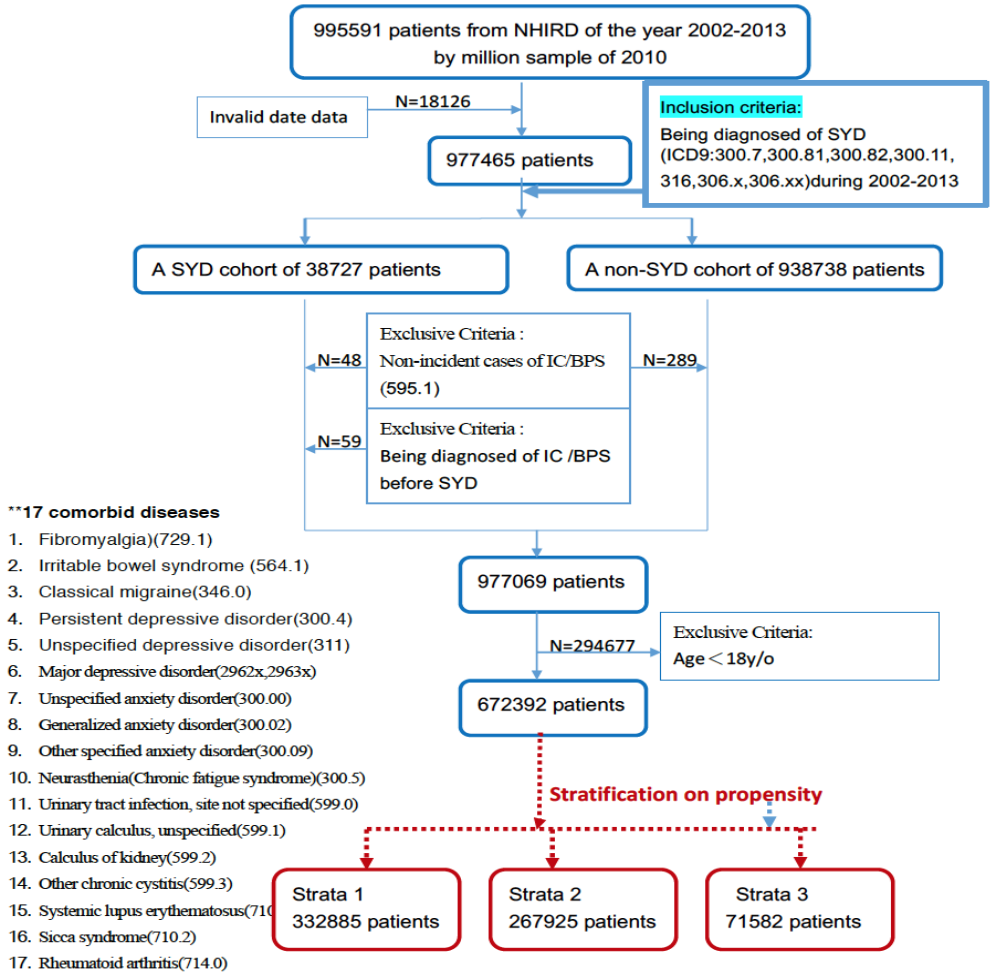
The etiology of IC/BPS was generally considered to be a multifactorial interplay between psychological, biological, and social factors. Previous study revealed that rates of depression and anxiety disorder were high in IC/BPS patients. However, depression and anxiety was different from somatic symptom disorder (SYD) in clinical manifestation. Recent studies showed that somatic symptom disorder (SYD) pattern might be an important phenotypic factor to IC/BPS. Moreover, it might be possible if SYD lead to IC/BPS or versus. The aim of the study was to investigate the causal relationship between SYD and IC/BPS.

Study design, materials and methods

We performed a retrospective cohort study of Longitudinal Health Insurance Database 2010 with newly diagnosis of SYD from 2002 through 2013. The Longitudinal Health Insurance Database 2000, a representative subset of the National Health Research Institute Database, comprised the complete original claims data of 1,000,000 individuals randomly sampled from the Registry of the National Health Research Institute Database. After limiting our sample to patients with SYD diagnosis (ICD-9 code 300.7or 300.81 or 300.82 or 300.11 or 316 or 306.xx at least once during the study period), we identified an SYD cohort. We then excluded patients with diagnosis of IC/BPS (ICD-9 codes, 595.1) before SYD diagnosis and the age of patient was under eighteen years old. After stratification on propensity-scores calculated by sex, age, and counts of out-patient visits for each of the 17 comorbid diseases, these 672392 patients were stratified into three strata (Figure 1). We calculate person-years for each patient through the date of IC diagnosis or December 31, 2013. The hazard ratio(HR) was estimated by cox regression model. Incidence density of IC/BPS in SYD cohort and non-SYD cohort was also calculated. All results were considered significant at $p < .05$.

<Figure 1> Flow chart

[Figure 1] Flow chart of the cohort study



<Table 1> The HR of IC/BPS in SYD and Non-SYD cohort

[Table 1] The HR of IC/BPS in SYD cohort and non-SYD cohort

IC/BPS cases	Total person-years	Incidence density[1]	IC/BPS cases	Total person-years	Incidence density[1]	Hazard Ratio[2] (95%CI)
Stratum1						
SYD cohort(n=7806)			**Non-SYD cohort(n=325079)**			
7	53641	13	220	3605618	6	1.16 (0.41-3.25)[1]
Stratum2						
SYD cohort(n=15837)			**Non-SYD cohort(n=252088)**			
51	113154	45	722	2854784	25	1.47(1.07~2.01)**
Stratum3						
SYD cohort(n=10750)			**Non-SYD cohort(n=60832)**			
97	84505	114	516	715142	72	1.72(1.38-2-16)**

[1] cases per 100,000 person-years

[2] Adjusted hazard ratio was estimated by cox regression, including sex, age and 15 comorbid diseases.

**P<.05

Results

The incidence density of IC/BPS between the SYD cohort and non-SYD cohort was significantly different across the three strata (relative ratio (95%CI), 2.14 (1.01-4.53), 1.52 (1.47-1.57), 1.59 (1.28-1.98), respectively). The adjusted hazard ratio (HR) of IC/BPS was significantly greater in the female-dominant and older-age strata –stratum 2 and stratum 3 (adjusted HR 1.47 (1.07-2.01), 1.72(1.38-2.16), respectively) (Table 1).

Interpretation of results

After control by both stratification and multivariate cox regression analysis, the adjusted hazard ratio of IC/BPS between the SYD and non-SYD cohort was statistically significant in the female-predominant, middle-age group (stratum 2) and the female-predominant, oldest (stratum 3). This finding accounted for a stronger relationship between SYD and IC/BPS under the condition of female and older age.

Concluding message

There was a stronger causal relationship between SYD and IC/BPS under the condition of female and older age. However, because of the discrete constellations of of somatic symptoms disorder, which had the strongest link to IC/BPS remain to be answered.

Disclosures

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