A comparison of the outpatient reimbursement for interstitial cystitis/bladder pain syndrome and fibromyalgia treatment in Taiwan: A nationwide population-based study

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Hypothesis / aims of study
Interstitial cystitis/bladder pain syndrome (IC/BPS) and fibromyalgia (FM) are two non-cancer chronic pain diseases with autonomic dysfunction. They also are one of the comorbidities for each other. They both take long time to get definite diagnosis because of no biomarkers or clear criteria (average: IC/BPS 7 years and FM 5 years). In this study, we compared public health insurance reimbursement between IC/BPS and FM in outpatient perspective to evaluate whether IC/BPS had more reimbursement than FM.

Study design, materials and methods
Through data mining in 2002-2013 Longitudinal Health Insurance Database of Taiwan, we identified IC/BPS and FM patients. In this study, we designed 2 models (unmatched and matched) to compare outpatient reimbursement for IC/BPS and FM. (model 1: comparisons between two cohorts without matching; model 2: first excluding patients with comorbidities [chronic diseases modified from RxRisk model and N<15], and then IC/BPS to FM matched under 1:1 ratio based on index date, sex, age, income, and the rest comorbidities) (Figure 1). The confounders, including age, sex, income, hospital levels and the rate of comorbidities would be adjusted in multiple linear regressions if there were significant differences. Data of expense were compared with Chi-square, ANOVA and multiple linear regressions.

Results
IC/BPS outpatient expenses were significantly higher than FM in both models. The yearly total pharmacy, total non-pharmacy, total claim, and per-visit pharmacy, per-visit non-pharmacy claim and per-visit total claim, all showed significantly different (Table 2 and table 5). In model 1, significantly higher proportion of female and lower income level in IC/BPS cohort were noted. In addition, the proportions of comorbidities in both cohorts were significantly different in depression, glaucoma, hypertension, psychotic disease and tuberculosis (Table 1). After regression analysis, IC/BPS had significantly higher outpatient reimbursement than FM in both model 1 and model 2, including yearly pharmacy, yearly non-pharmacy, yearly total claim, per-visit pharmacy, per-visit non-pharmacy and per-visit total claim (Table 3 and table 6).

Interpretation of results
The result of model 1 and 2 revealed the same tendency which can confirm the reimbursement outcome in the cohort study. It was identified that outpatient reimbursement was significantly higher in IC/BPS than FM from results of both model 1 and 2. The larger proportion of female patients and the lower income in IC/BPS population observed in model 1 is compatible with clinical scenario. The proportions of comorbidities of IC/BPS were significantly higher in IC/BPS except hypertension. It might indicate IC/BPS cohort had more complicated health condition. Our study result of lower male prevalence in IC/BPS, contrast to the higher male prevalence of hypertension in other epidemiology study, that may explain the lower comorbidity in our study.

Concluding message
IC/BPS has significantly different gender and income distribution. The outpatient reimbursement for IC/BPS was significantly higher than FM in both pharmacy and non-pharmacy expenditure. Due to IC/BPS patients experiencing more complex health condition, more pharmacy and non-pharmacy treatment were needed. Because of the chronicity of IC/BPS, the expenditure will increase as time goes on. Paying more attention to the disease research and providing more efficient treatment are encouraged.

References
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