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A COMPARISON STUDY ON OUTPATIENT REIMBURSEMENT BETWEEN INTERSTITIAL CYSTITIS/ BLADDER PAIN SYNDROME AND RHEUMATOID ARTHRITIS PATIENTS IN TAIWAN PUBLIC HEALTH INSURANCE

Hypothesis / aims of study

Interstitial cystitis/bladder pain syndrome (IC/BPS) and Rheumatoid arthritis (RA) are two non-cancer chronic pain diseases. They share similar age and gender distribution. The goal of treatment is better quality of life, but the medical reimbursement is difficult to evaluate. Clemen (2008) reported IC/BPS medical expense 2-4 times higher than non- IC/BPS. In this study, we objectively compared public health insurance reimbursement between IC/BPS and RA during one year after index date (the date of first diagnosis) in outpatient perspective to evaluate whether IC/BPS had more reimbursement than RA.

Study design, materials and methods

Through data mining in 2002-2013 Longitudinal Health Insurance Database of Taiwan, we identified IC/BPS and RA patients. IC/BPS to RA were matched under 1:5 ratio based on index month. (See figure 1) Possible confounders, including age, sex, insurance fee, hospital levels and the cost from comorbidities (24 chronic diseases modified from RxRisk model) were surveyed and adjusted. Data of expense were compared with Chi-square, ANOVA and Multiple linear regression based on the purpose of our research and properties of variables.

Results

There were significant differences in age and sex between the two groups. IC/BPS patients were younger (IC/BPS vs. RA: 46.62± 15.82 y/o vs. 52.25± 15.05 y/o), with larger female ratio (79.5% vs. 71.4%). Fifty two percent IC/BPS were first diagnosed in hospitals above regional level, while RA (63%) were below local hospital level. (See table 1) There was no significant difference in the cost from comorbidities, except patients with end stage renal disease (ESRD). Without confounders adjusted, there were significant differences in total yearly pharmacy claim (IC/BPS vs. RA: $ 39.5± 142.8 vs. $94.3± 413.3), total yearly claim (IC/BPS vs. RA: $144.1± 377.8 vs. $193.9± 549.8) and pharmacy claim per visit (IC/BPS vs. RA: $8.2± 12 vs. $11.2± 24.6). After confounders adjusted, there were significant differences in yearly total pharmacy claim (IC/BPS to RA: $-65.8), yearly total claim ((IC/BPS to RA: $-64.1), pharmacy claim per visit (IC/BPS to RA: $ -3.4) and total cost per visit (IC/BPS to RA: $-5.0). (See table 2 and 3) Average time of IC/BPS outpatient visit was less by nearly 1 time than RA.

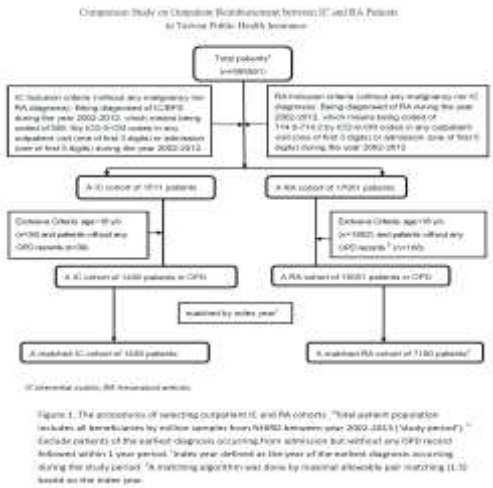
Interpretation of results

In our study, female dominant in IC/BPS population is compatible with clinical scenario. More than half IC/BPS patients were first diagnosed at higher hospital level. Because of disease complexity in IC/BPS, efficient diagnosis might depend on expert physicians in those hospitals. Though IC/BPS were younger and larger female ratio than RA, there was no difference in reimbursement from comorbidities, except ESRD. Many studies illustrated IC/BPS had more medical cost than non-IC/BPS patients. The results demonstrated the outpatient reimbursements of IC/BPS were less than RA, mostly from pharmacy expense, no matter confounders adjusted or not. This might be due to tremendous resources dispensed in new pharmaceutical development, resulting in good outcome of RA patient care but much medical expenses. Less IC/BPS outpatient visit perhaps was due to inefficient treatment and patients reluctant to go out because of frequency and urgency. Limitation of this study: because of poor treatment outcome, IC/BPS would search complementary and alternative medicine which cost could not be identified in our study.

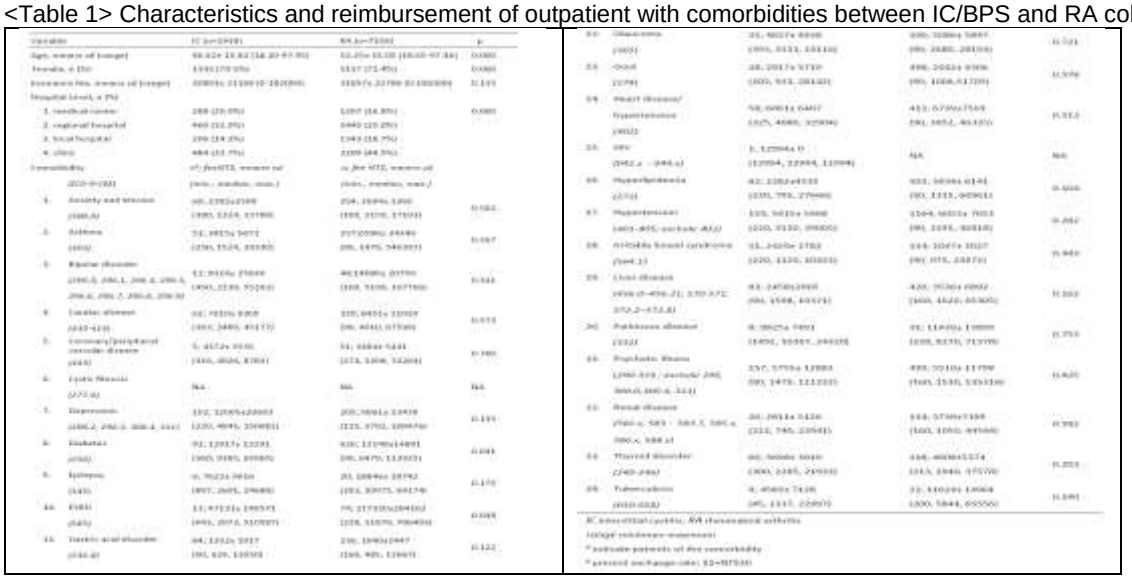
Concluding message

Compared to RA, IC/BPS has significant different age and gender distribution. The outpatient reimbursement for IC/BPS was significant lower than RA, mainly on the pharmacy expenditure. It might be due to well-developed RA diagnosis criteria, treatment guideline and pharmaceutical advancement. The etiology of IC/BPS has been considered multifactorial, and it makes correct diagnosis and efficient treatment difficult. To improve quality of life of IC/BPS patients, we should pay more attention to the disease research and treatment development.

<Figure 1> Flow chart



<Table 1> Characteristics and reimbursement of outpatient with comorbidities between IC/BPS and RA cohort



<Table 2> Outpatient reimbursement comparisons between IC/BPS cohort (n=1438) and RA cohort (n=7190) [a], without confounders adjusted.

Variable	IC, fee NTS, mean±sd (range)	RA, fee NTS, mean±sd (range)	p
pharmacy claim	1184± 4284 (0-75188)	2830± 11400 (0-402502)	0.000
non-pharmacy claim	3140± 9241 (90-126048)	2788± 8331 (0-539900)	0.191
total claim	4324± 11335 (90-135169)	5618± 16405 (90-539500)	0.004
pharmacy claim per visit	245± 360 (0-4524)	336± 737 (0-29079)	0.000
non-pharmacy claim per visit	814±1246 (90-16583)	781± 1413 (0-50856)	0.402
total claim per visit	1059± 1282 (90-16761)	1117± 1587 (90-50856)	0.193

IC interstitial cystitis; RA rheumatoid arthritis

[a] cost incurred in all OPD visits within 1 year after first diagnosed date.

range minimum-maximum

<Table 3> Outpatient reimbursement comparisons between two cohorts with confounders adjusted[a].

Variable	Regression coefficient	(95% confidence interval)
Pharmacy claim (IC/RA)	-1973*	(-2625 - -1320)
Non-pharmacy claim	53	(-427 - 533)
Total cost	-1923*	(-2810 - -1036)
Pharmacy claim per visit	-103*	(-142 - -65)
Non-pharmacy claim per visit	-45	(-119 - 29)
Total cost per visit	-149*	(-230 - -67)

IC interstitial cystitis; *RA* rheumatoid arthritis

[a] *adjusted confounders* of age, gender, hospital level and ESRD.

* indicate p<0.05

Disclosures
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