

## Changes of service use in schizophrenia patients treated with long-acting injectable risperidone (RLAI)

– A 1-year mirror-image study with a national claim-based database in Taiwan

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## INTRODUCTION (1)

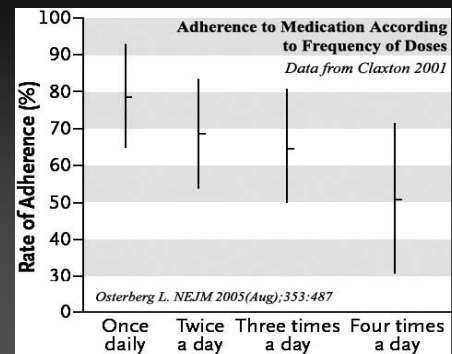
- What's known on this subject:
  - Life prevalence ~1%, point prevalence ~0.4%
  - Age of onset: 15~30 years
  - Course
    - 20% remission (nearly full functioning)
    - 30% repeated relapse (barely functioning, and each previous hospital admission raises cost by about 5%)
    - 40% chronicity (partially functioning)
    - 10% commit suicide (30% attempt suicide)

(Knapp et al 2002; Leitão et al 2006; WHO 2000)

## INTRODUCTION (2)

- Drug compliance
  - Non-psychiatric disorder, ie DM, HTN: 76%
  - Antidepressants: 65%
  - Antipsychotics: 58%
  - Mood stabilizers: 20%
- Poor compliance → relapse → costly hospitalization

(Cramer 1998; Kane JM 2003; Schoder NR, 2003; Czernansky JC 2002)



## INTRODUCTION (3)

- Risperidone long-acting injection (RLAI)
  - 第二代抗精神病藥物長效針劑 (Second-generation long-acting injectable antipsychotics)
  - 2004.6健保局核准給付
  - 針劑劑型為25ml, 50ml, 37.5ml
  - 建議劑量為25ml/劑/每兩週

## INTRODUCTION (4)

- Economic evaluation in mental health care
  - broad perspective
  - multi-agency involvement
  - complex interventions
  - significant data collection burden
  - multiple outcomes
  - inadequate quality of life scales
  - highly skewed costs
  - implications for sample size
  - implications for statistical analysis
  - complex problems, complex interventions
  - complex evaluations

## INTRODUCTION (3)

- Risperidone long-acting injection (RLAI)
  - has recently been reported cost effective in a 35-month mirror-image study in a community-based inpatient setting (**case note**)
  - has reported a reduction of hospital utilization and effectiveness on clinical outcome of patients with bipolar disorder (**RCT**)

*(Niaz OS, 2007; Vita E, 2008)*

## OBJECTIVES

- To assess whether Risperidone long-acting injection (RLAI) treatment is associated with reduced service utilization in the real world with a national health insurance database in Taiwan

cost-consequence  
analysis 成本結果分析

## METHODS (1)

- Data source
  - the Psychiatric Inpatients Medical Claims Data (PIMC) of NHIRD 精神疾病住院歸人檔
  - claims of patients that were admitted to psychiatric services with ICD-9-code 230-319 or A-code A210-A219 were extracted from 1996-2001 admission files
  - the PIMC dataset contains cohort data of 38,583 schizophrenic patients from a total of 91,104 subjects (encrypted)
  - medical claims during 1996-2006 were linked by ID

## METHODS (2)

- Mirror image study
  - in which each patient acts as his/her own control
- Inclusion criteria were patients who
  - had a primary diagnosis of schizophrenia
  - could be observed at least 1 year after the first dose of RLAI initiated
  - were continuously treated with RLAI for at least 1 year. A total of 75 mg of RLAI for every 3-month period was considered as continuous treatment.

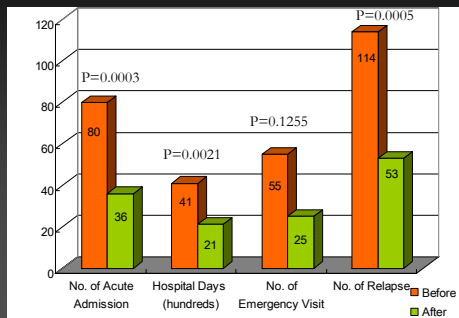
## METHODS (3)

- Outcome measurement
  - number of acute hospital admissions
  - number of hospital days
  - number of ER visits
  - number of relapses
- Statistical analyses
  - the Wilcoxon signed rank tests
  - secondary analysis
  - SAS/Stat system for Windows, version 9.01 (SAS Institute, Cary, NC)

## RESULTS

- A total number of 108 (50% male) out of 1,449 met the inclusion criteria. The mean age of subjects was  $42 \pm 10.1$  years old.
- The total number of **acute admissions** was reduced by 55 % (80 vs. 36,  $p=0.0003$ ), total **hospital days** were reduced by 48 % (4,106 vs. 2,126,  $p=0.0021$ ), and number of **relapse** were reduced by 54% (115 vs. 53,  $p=0.0005$ ) in the 1-year post-RLAI period.
- A reduced number of **emergency room visits** was also observed (55 vs. 25) but not significantly different ( $p=0.1255$ ).

### Change of hospital service use before and after one-year treatment of RLAI



Chang et al. 2008

### Change of hospital service use before and after 1-year treatment of RLAI

	Pre-RLAI period	Post-RLAI period	P-value*
<b>Primary analysis, N=108</b>			
Number of acute admission	80	36	0.0003*
Number of hospital days	4106	2127	0.0021*
Number of ER visits	55	25	0.1255
Number of relapse	114	53	0.0005*
<b>Secondary analysis, N=91</b>			
Number of acute admission	49	21	0.0017*
Number of hospital days	1517	632	0.0082*
Number of ER visits	36	20	0.1244
Number of relapse	74	36	0.0024*

## DICUSSION

- Strengths
  - to have patients act as their own controls
  - to assess real-world practice, which is for sound coverage, payment, and reimbursement decisions
- Limitations
  - the selection bias
  - exclusion of non-compliant patients
  - disease severity, combined oral medication

## CONCLUSION

- In conclusion, this 1-year mirror-image analysis showed that RLAI treatment is associated with a reduction of hospital service utilization in Taiwan
- Suggestions for future studies
  - a prospective clinical trial or a case-controlled design using the claim data are warranted for generalisability

Thank you for your attention

