Impact of a Clinical Practice Guideline and Its Passive Dissemination among Thai Psychiatrists' Prescribing Attitudes towards Treatment-Resistant Schizophrenia. *

PICHET UDOMRATN, M.D.

Department of Psychiatry,

Faculty of Medicine, Prince of Songkla University,

Hat Yai, Songkhla 90110, Thailand.

MANIT SRISURAPANONT, M.D.

Department of Psychiatry,

Faculty of Medicine, Chiang Mai University,

Chiang Mai 50200, Thailand.

Short running title : Impact of CPG among psychiatrists' prescribing attitudes

Corresponding Author : Pichet Udomratn, M.D.
Department of Psychiatry,
Faculty of Medicine,
Prince of Songkla University,
Hat Yai, Songkhla 90110,
Thailand.
Tel : +66-74-429922
Fax : +66-74-212912, +66-74-212900
E-mail : upichet@ratree.psu.ac.th

---

* This research was supported by the Health Systems Research Institute (HSRI) of Thailand

ผลกระทบของแนวทางการใช้ยารักษาโรคจิตเภทที่ไม่ตอบสนองต่อการรักษา ต่อเวชปฏิบัติของจิตแพทย์ไทย

พิเชฐ อุดมรัตน์*
มานิต ศรีสุรภานนท์**

บทคัดย่อ

วัตถุประสงค์ : เพื่อศึกษาว่า "แนวทางการใช้ยารักษาโรคจิตเภทที่ไม่ตอบสนองต่อการรักษา" (Pharmacotherapy for Treatment - Resistant Schizophrenia Guideline, PTRS guideline) ที่พัฒนาขึ้นโดยคณะทำงานในประเทศไทยนั้น มีผลต่อเวชปฏิบัติของจิตแพทย์หรือไม่ และจิตแพทย์มีความคิดเห็นอย่างไรต่อ PTRS Guideline ดังกล่าว

วิธีการ : ได้ส่งแบบสอบถามไปให้สมาชิกของราชวิทยาลัยจิตแพทย์แห่งประเทศไทย ที่เป็นสมาชิกก่อนเดือน มิถุนายน 2542 จำนวนทั้งสิ้น 250 ราย โดยส่งแบบสอบถามไป 2 รอบ แต่ละรอบจะส่งแบบสอบถามเดิมซ้ำไปอีกหนึ่งครั้ง โดยส่งห่างจากครั้งแรกหนึ่งเดือน สำหรับรอบแรกได้ส่งไปในช่วงเดือนสิงหาคม - กันยายน 2542 ก่อนที่จะมีการเผยแพร่ PTRS guideline ส่วนรอบหลังส่งไปในช่วงเดือนมิถุนายน - กรกฎาคม 2543

ผล : มีผู้ตอบแบบสอบถามกลับมาในรอบแรก 105 ราย และรอบสอง 91 ราย แต่มีแบบสอบถามที่สามารถนำมาวิเคราะห์ได้ ในรอบแรก 94 ราย และรอบสอง 84 ราย ตามลำดับ ผู้ตอบแบบสอบถามส่วนใหญ่เป็นเพศชาย (ร้อยละ 72) โดยมีอายุเฉลี่ย 42.33 ปี และทำงานมานานเฉลี่ย 15.27 ปี ลักษณะของผู้ตอบแบบสอบถามทั้งสองรอบไม่มีความแตกต่างกันอย่างมีนัยสำคัญ ทั้งในเรื่องเพศ อายุ ระยะเวลาการปฏิบัติงาน และสถานที่ทำงาน

คำตอบจากแบบสอบถามในรอบแรกและรอบหลัง ในการจะวินิจฉัยว่าผู้ป่วยเป็นโรคจิตเภทที่ไม่ตอบสนองต่อการรักษา (TRS) นั้น จิตแพทย์จะพิจารณาจากจำนวนยา conventional antipsychotic (CA) 1,2,3 และมากกว่า 3 ชนิดขึ้นไป เป็นจำนวน 2 กับ 2, 26 กับ 36, 37 กับ 30, และ 28 กับ 14 รายตามลำดับ ซึ่งไม่พบว่ามีความแตกต่างกันจากการสอบถามทั้งสองรอบ ($\chi^2 = 6.35$, df = 3, p = 0.10)

ส่วนจะวินิจฉัยว่าผู้ป่วยเป็น TRS ก็ต่อเมื่อได้ขนาดยา CA เท่าใดนั้น ในรอบแรกจิตแพทย์ 39, 19 และ 12 ราย ตอบว่าจะต้องมากกว่า 1000 มก./วัน, 700 - 800 มก./วัน และ 900 - 1000 มก./วัน ของ CPZ equivalent ตามลำดับ ในขณะที่ผลจากแบบสอบถามรอบสอง จิตแพทย์ 25,17, และ

---

* ภาควิชาจิตเวชศาสตร์ คณะแพทยศาสตร์ มหาวิทยาลัยสงขลานครินทร์ อำเภอหาดใหญ่ จังหวัดสงขลา 90110.

** ภาควิชาจิตเวชศาสตร์ คณะแพทยศาสตร์ มหาวิทยาลัยเชียงใหม่ อำเภอเมือง จังหวัดเชียงใหม่ 50200.

12 ราย ตอบว่าจะต้องมากกว่า 1000 มก./วัน, 800-900 มก./วัน และ 900 - 1000 มก./วัน ของ CPZ equivalent ซึ่งไม่มีความแตกต่างกันทางสถิติ ($\chi^2 = 11.53$, df = 10, p = 0.32)

จากการสอบถามรอบแรก พบว่า 3 ลำดับแรก ที่จิตแพทย์ยอมรับในการใช้ยารักษา TRS คือเปลี่ยนไปใช้ยา risperidone อย่างเดียว, เปลี่ยนไปใช้ยา CA ตัวอื่น, และเพิ่ม carbamazepine เข้าไปควบคู่กับยา CA ตัวเดิม แต่จากผลการสอบถามรอบสอง ปรากฏว่า ลำดับที่ 1,2 ยังคงเหมือนเดิม แต่ลำดับ 3 กลับเปลี่ยนเป็นไปใช้ยา clozapine อย่างเดียวแทน แม้การเปลี่ยนไปใช้ยา clozapine อย่างเดียว จะได้รับการยอมรับมากขึ้น แต่ก็ไม่แตกต่างจากรอบแรกอย่างมีนัยสำคัญ (p = 0.77) แต่มีแนวโน้มว่าการเพิ่ม carbamazepine เข้าไปควบคู่กับยา CA ตัวเดิมนั้น ได้รับการยอมรับลดลงอย่างมีนัยสำคัญทางสถิติ (p = 0.13) แนวโน้มที่พบเปลี่ยนแปลงไปอีกอย่างก็คือ การเปลี่ยนไปใช้ยา quetiapine อย่างเดียวได้รับการยอมรับมากขึ้น เมื่อเทียบกับรอบแรก (p = 0.11) ส่วนการยอมรับใน intervention อื่น ๆ นั้นไม่มีความแตกต่างกันจากการสอบถามรอบแรกและรอบหลัง

จากการสอบถามรอบแรก จิตแพทย์ 33,22, และ 10 ราย เลือกการเพิ่มขนาดยา CA, เปลี่ยนไปใช้ยา CA ตัวอื่น, และเปลี่ยนไปใช้ risperidone อย่างเดียว เป็นการรักษาอย่างแรก (first line treatment) สำหรับ TRS

จากการสอบถามรอบหลัง จิตแพทย์ 84 ราย ตอบว่า ขณะนี้ตัวเองมีผู้ป่วย TRS อยู่เฉลี่ยร้อยละ 10.78 (SD = 10.63) ของผู้ป่วยจิตเภททั้งหมด โดยมีจิตแพทย์ 80 ราย ที่ให้ข้อมูลเรื่อง PTRS Guideline 55 ราย ตอบว่าทราบเรื่อง PTRS Guideline แต่มี 15 ราย ที่ไม่ทราบ และอีก 10 ราย ที่ไม่แน่ใจ ในจำนวน 55 ราย ที่ทราบนั้น มีอยู่ 40 รายที่ได้อ่าน guideline และเห็นว่า guideline นี้ยอมรับได้ โดยมีค่าเฉลี่ย (means) ของการยอมรับเท่ากับ 70.88 (SD = 13.70) และมีผลต่อเวชปฏิบัติของตัวเอง โดยมีค่าเฉลี่ยเท่ากับ 58.87 (SD = 19.56) ตามลำดับ

สรุป : จากการสอบถามทั้งสองรอบ ไม่พบว่ามีความแตกต่างอย่างชัดเจนมากนัก ในการใช้ยารักษาผู้ป่วย TRS ยกเว้นว่ามีการยอมรับมากขึ้น ในการเปลี่ยนไปใช้ยา quetiapine อย่างเดียว ขณะที่การเพิ่ม carbamazepine เข้าไปควบคู่กับยา CA ตัวเดิมนั้น ได้รับการยอมรับลดลง การที่ guideline ไม่ได้มีผลมากนักต่อเวชปฏิบัติ ก็คล้ายคลึงกับที่มีผู้ศึกษาไว้ในต่างประเทศ ซึ่งส่วนหนึ่งอาจเป็นเพราะจิตแพทย์ทั้งหมดยังไม่ได้รับรู้ข้อมูลเรื่องนี้ เพราะแม้จะมีการเผยแพร่ PTRS Guideline ไปในหลายรูปแบบ เช่น นำเสนอในที่ประชุมวิชาการประจำปี, ลงพิมพ์ในวารสาร จพสท, ผ่านทาง homepage http:/go.to/ptrsguideline, และส่งให้สมาชิกราชวิทยาลัยฯ โดยตรงทางไปรษณีย์แล้ว แต่ก็มีสมาชิกที่ทราบเพียง 55 ราย จากจำนวนจิตแพทย์ 84 ราย ที่ตอบแบบสอบถาม และมีเพียง 40 รายเท่านั้นที่ได้อ่าน ซึ่งข้อมูลนี้คงเป็นประโยชน์ให้กับทางราชวิทยาลัยฯ ในการจัดทำและเผยแพร่ clinical practice guideline (CPG) ของโรคจิตเวชอื่น ๆ ต่อไป

Impact of a Clinical Practice Guideline and Its Passive Dissemination among Thai Psychiatrists' Prescribing Attitudes towards Treatment-Resistant Schizophrenia.

Pichet Udomratn, M.D.
Manit Srisurapanont, M.D.

Abstract

Clinical practice guidelines (CPG) are increasingly used in current practice. The impact of CPG on physicians' attitudes and behavior is important because they play role in reducing practice variations. A passive dissemination of CPGs is not a costly method, especially in developing countries like Thailand. So the aim of this paper is to find out the impact of a CPG and its passive dissemination among Thai psychiatrists' prescribing attitudes towards treatment-resistant schizophrenia.

Two surveys were conducted before and after the dissemination of the CPG between July 1999 and September 2000. The participants of this study were members of the Royal College of Psychiatrists (Thailand). The guideline for the pharmacotherapy of treatment-resistant schizophrenia (TRS) which we disseminated is the first evidence-based CPG developed in (Thailand). In the first and second rounds of survey, 94 questionnaires of the first round and and 84 ones of the second round were analysed for the variation of opinions on TRS.

About 72% of the respondents were male. The means age and duration of practice were 42.33 and 15.27 years. The respondents' characteristics obtained from the first and second rounds were not significantly different in the respects of sex, age, years of practice, specialty, and clinical setting.

In the first round, the first three accepted inventions for treating TRS were switching to risperidone alone, switching to another conventional antipsychotic (CA) and adding carbamazepine to the on-going CA. In the second round, the first three accepted inventions were switching to risperidone alone, switching to another CA, and switching to clozapine alone. Although the strategy of switching to clozapine alone was more accepted, the acceptance of this intervention obtained from both rounds was not different. There was a trend that the strategy of adding carbamazepine to the on-going CA was less accepted. Another trend is the strategy of switching to quetiapine alone was more accepted. The acceptances of the other interventions were not significantly different. In the first round, 33, 22, and 10 psychiatrists considered that increasing the doses of CA, switching to another CA, and switching to risperidone were first-line treatment for TRS. The interventions chosen as first-line treatment for TRS were not significantly different. In addition, the opinions about second- and third-line treatments were also not significantly different.

Of 80 respondents who expressed their opinions on the CPG, 55, 15, and 10 stated that they knew, did not know, and were uncertain about the availability of guideline, respectively. Of 55 respondents who knew about the availability of guideline, 40 ones read it. The means (SDs) of the guideline acceptance and the impact of guideline on the practice obtained from those 40 respondents were 70 (13.7) and 58 (19.6), respectively.

Key Words

Clinical practice guideline
Psychiatrists' attitudes and behavior
Passive dissemination
Treatment resistant schizophrenia
Conventional antipsychotic
Impact
Acceptability

Introduction

Clinical practice guidelines (CPG) are systematically developed statements designed to assist practitioner and patient decisions about appropriate health care for specific clinical circumstances [1]. CPGs are increasingly used in current practice and will become more commonly used during the next decade. A common aim of most CPG development is to limit unnecessary and unjustified variations in practice. However, there are several factors that may affect the achievement of such aim, including the impact of a CPG on physicians' attitudes and behavior.

The impact of CPGs on physicians' attitudes and behavior is important because physicians are targeted users of most CPGs and because they play roles in reducing practice variations. Some experts believe that the development and publication of good guidelines do not ensure their use in practice and are insufficient in themselves to produce sustained changes in clinical management [2-3]. A recent review found serious deficiencies in the implementation of CPGs in practice [4].

Several methods of dissemination have been applied in implementing CPGs. Of those, passive dissemination, including mailing CPGs to physicians, is a frequently used method since it is less expensive than others. Although this method seems to be effective for diagnostic guidelines [5-6], its effectiveness for treatment is unclear. Some studies found it partially effective in changing treatment [7-8], but other studies did not [9].

As passive dissemination of CPGs is not a costly method, it should be particularly relevant in developing countries. An evidence-based CPG in treatment-resistant schizophrenia (TRS) has been developed in Thailand [10], so we have studied its impact following dissemination on Thai psychiatrists' prescribing for this disorder.

Material and method

Surveys were conducted before and after the dissemination of the CPG. To encourage a maximum response, we used no method to identify the respondents. For each of the surveys, questionnaires were mailed twice at monthly intervals. Only those who had not responded to the first-mailed questionnaires were requested to fill in the second one. The study was conducted in Thailand between July 1999 and September 2000. The participants of this study were members of the Royal College of Psychiatrists (Thailand). Only certified psychiatrists are eligible to been college members.

Guideline

The guideline for the pharmacotherapy of treatment-resistant schizophrenia [10] which we disseminated is the first evidence-based CPG developed in Thailand. Its development was an academic activity of the Royal College of Psychiatrists (Thailand). It was supported by the Health Systems Research Institute (Thailand). The CPG quality met the three items of a CPG standard checklist [11]. The CPG strongly recommends the use of clozapine alone and risperidone alone as first-line treatment for TRS. Apart from two drugs, other atypical antipsychotics have not sufficient evidence published in journals which was searched by MEDLINE until December 1998 when the CPG was developed, showing effectiveness in treating TRS. It strongly advises against the addition of lithium or carbamazepine to ongoing conventional antipsychotics.

Questionnaire

In the first survey, we mailed the questionnaire to the psychiatrists to assess their prescribing attitudes at baseline. The sought information on the respondents characteristics and listed 20 pharmacological interventions for TRS. The questionnaire also asked the question, "If a TRS patient has no economic problem and has no contraindiction for any drug, in your real-world practice, which are the interventions that you will choose?" The participants were requested to indicate the interventions they chose together with their first-, second-, and third-line preferences.

Procedure

The CPG was disseminated by : i) presentation in an one hour session at a Thai psychiatric annual meeting, ii) publication it in a Thai well-known medical journal, and iii) mailing to all members of the Royal College of Psychiatrists (Thailand). The last method ensured that all participants received unsolicited copies of the CPG before the second questionnaire.

The contents of the questionnaire in the second survey used the same as that was in the first survey with an addition a question asking whether the participants were aware of the availability of the CPG. For those who were aware of, we inquired whether they had read the CPG, and for those who had read the CPG, we requested them to rate the acceptability of the CPG recommendations and its impact on their practice. Two 100 mm visual analogue scales were used as measures of acceptability (ranging from not acceptable at all to very highly acceptable) and impact (from no impact at all to very highly impact). The participants were requested to mark an "X" on the line that corresponded to their opinions. Values of 50 or higher indicated positive responses of the participants.

Statistics

The Chi-square test was applied to compare the dichotomous data obtained before and after the CPG dissemination, while the student t-test was applied to compare the continuous data. Two tailed significant differences ($p < 0.05$) were applied throughout the study.

Results

In both surveys, the questionnaires were mailed to 250 members of the Royal College of Psychiatrists (Thailand). In the first survey, 105 questionnaires were returned. On 7 of these the respondents stated that they did not wish to complete it. All but 4 of the respondents provided detials of their sex, age, etc. The 94 completed questionnaires were analysed. In the second survey, 91 questionnaires were returned. Of these, 4 respondents declined to complete questionnaires, while the characteristics of 3 respondents were not provided. Therefore 84 questionnaires of the second survey were analysed.

Most of the respondents in both surveys were male. The mean age and duration of practice were 42.3-42.7 and 15.3-15.4 years, respectively. Most of them practiced in adult psychiatry and worked in psychiatric/neurological and university hospitals. The respondents' characteristics obtained from the first and second surveys were not significantly different in the respects of sex, age, years of practice, specialty, and clinical setting (see Table 1).

(insert Table 1 about here)

In the first survey, the first three most favoured inventions for treating TRS were switching to risperidone alone, switching to another conventional antipsychotic, and adding carbamazepine to the on-going conventional antipsychotic (see Table 2). In the second survey, they were switching to risperidone alone, switching to another conventional antipsychotic, and switching to clozapine alone. Although the strategy of switching to clozapine alone was more frequently favoured in the second survey, the number of respondents who favoured it was not significantly higher than that of the first survey ($p = 0.77$). Furthermore, the strategy of adding carbamazepine to the on-going conventional antipsychotic was not significantly less frequently accepted in the second survey ($p = 0.13$). Switching to quetiapine alone was more accepted in the second survey ($p = 0.11$). The acceptances of the other 17 interventions were also not significantly different.

(insert Table 2 about here)

In the first survey, 33, 22, and 10 psychiatrists considered that increasing the doses of a conventional antipsychotic, switching to another conventional antipsychotic, and switching to risperidone alone were first-line treatments. The interventions chosen as first-, second-, and third-line treatments in both surveys were not significantly different (Chi-square = 5.39, df = 11, $p = 0.91$; Chi-square = 11.74, df = 13, $p = 0.55$; and Chi-square = 7.29, df = 14, $p = 0.92$; respectively).

In the second survey, 80 respondents of the total of 84 expressed their opinions on the CPG. Fifty-five (68.8%), 15 (18.8%), and 10 (12.5%) respondents stated that they were aware of, were not aware of, and were uncertain about the availability of the CPG, respectively. Of 55 respondents who were aware of its availability, 40 had read it which meant that at best, only half of the psychiatrists had read the CPG. The mean (SD) visual analogue measure of CPG acceptability and impact on practice of the 40 respondents were 70.9 (13.7) and 58.9 (19.6), respectively.

Discussion

The main finding in this study was that passive dissemination of a CPG had no apparent impact on Thai psychiatrists' prescribing attitude towards the treatment of TRS. However, they accepted the CPG and considered that it had some impact on their practice. This finding is similar to that of a study conducted in the USA [9], which found that passive dissemination was not effective in implementing CPGs and the results of two reviews, which found that passive dissemination of printed educational materials such as conference reports and others unsolicited educational materials lead to no change in practice [12-13]. By contrast, the results are inconsistent with those of two other studies [7-8].

All members of the Royal College of Psychiatrists (Thailand) should have receive both the CPG and the questionnaire. However, only 68.8% and 50% of them were aware of the CPG and had read it, respectively. The relatively small proportion of respondents who read the CPG could be due to several factors, especially preferred physicians', sources of information. It has been found that textbooks are the preferred source of physicians in developing countries [14].

The apparent failure to implement CPG found in our study may in part be caused by the ineffectiveness in general passive dissemination leading to a low rate of awareness and reading. Taken together with the results of two comprehensive reviews [15-16], CPG dissemination in developing countries should take into account multifaceted

interventions of audit and feedback, reminders, outreach visits, patient-mediated interventions, and opinion leaders.

Others reasons why CPG are not put into affect include lack of outcome expectancy; self efficicacy; motivation (sometimes based on inertia and agreement with the guidelines) or guidelines in general; as well as an attitude barrier [17].

There are limitations to our study. First, the response rate was low. Secondly it is possible that some significant differences were not revealed becuase of the small sample size, Thirdly what psychiatrists say about their attitudes is not necessary reflected in their prescribing practice.

In conclusion, the passive dissemination of a CPG in the management of TRS appeared to have no impact on Thai psychiatrists' prescribing attidtudes. This may be due to low rates of CPG awareness and reading. CPG dissemination in developing countries should take into account the multifaceted interventions of audit and feedback, reminders, outreach visits, patient-mediated interventions, and opinion leaders. Further studies of their effectiveness in developing countries should be conducted.

Acknowledgements

The authors wish to thank Professor Guy Edwards, a visiting professor from Southamptom, United Kingdom for his valuable comment and for correcting the English of the manuscript. The Health Systems Research Institute (HSRI) of Thailand is also gratefully appreciated for a grant support. The authors would also like to thank Ms Ngamjit Chantrasathit of HSRI for her co-ordination assistance.

References

1. Field MJ, Lohr MJ. Clinical practice guidelines: directions for a new program. Washington, DC : National Academy Press, 1990.
2. Feder G, Eccles M, Grol R, Griffiths C, Grimshaw J. Clinical guidelines: using clinical guidelines. BMJ 1999;318:728-30.
3. Gundersen L. The effect of clinical practice guidelines on variations in care. Ann Intern Med 2000;133:317.
4. Davis DA, Taylor-Vaisey A. Translating guidelines into practice: a systematic review of theoretic concepts, practical experience and research evidence in the adoption of clinical practice guidelines. Can Med Assoc J 1997;157:408-16.
5. Oakeshott P, Kerry SM, Williams JE. Randomized controlled trial of the effect of the Royal College of Radiologists' guidelines on general practitioners' referrals for radiographic examination. Br J Gen Pract 1994;44:197-200.
6. Bearcroft PW, Small JH, Flower CD. Chest radiography guidelines for general practitioners: a practical approach. Clin Radiol 1994;49:56-8.
7. Lomas J, Anderson GM, Domnick-Pierre K, Vayda E, Enkin MW, Hannah WJ. Do practice guidelines guide practice? The effect of a consensus statement on the practice of physicians. N Eng L Med 1989;321:1306-11.
8. North of England study of standards and performance in general practice. Medical audit II : effects on health of patients with common childhood conditions. BMJ 1992;304:1484-8.
9. Evans CE, Haynes RB, Birkett NJ, Gilbert RJ, Taylor DW, Sackett DL, et al. Does a mailed continuing education program improve physician performance? JAMA 1986;255:501-4.

10. Disayavanish C, Srisurapanont M, Udomratn P, Disayavanish P, Kasantikul D, Netrakom P, et al. Guideline for the pharmacotherapy of treatment-resistant schizophrenia. J Med Assoc Thai 2000;83:579-89.
11. Grilli R, Magrini N, Penna A, Mura G, Liberati A. Practice guidelines developed by specialty societies: the need for a critical appraisal. Lancet 2000;355:103-6.
12. Lomas J. Words without action ? The production, dissemination, and impact of consensus recommendations. Annu Rev Public Health 1991;12:41-65.
13. Freemantle N, Harvey EL, Wolf F, Grimshaw JM, Grilli R, Bero LA. Printed educational materials to improve the behaviour of health care professionals and patient outcomes (Cochrane Review). In : The Cochrane Library. Issue 3, 2000. Oxford: Update Software.
14. Page J, Heller RF, Kinlay S, Lim LLY, Qian W, Suping Z, et al. Where do developing world clinicians obtain evidence for practice: A case study on pneumonia. J Clin Epidemiol 2000;53:669-75.
15. Oxman AD, Thomson MA, Davis DA, Haynes RB. No magic bullets: a systematic review of 102 trials of interventions to improve professional practice. Can Med Assoc J 1995;153:1423-31.
16. NHS Centre for Reviews and Dissemination. Getting evidence into practice. Effective Health Care 1999;5:1-14.
17. Cabana MD, Rand CS, Powe NR, Wu AW, Wilson MH, Abboud PC, Rubin HR. Why don’t physicians follow clinical practice guidelines ? A framework for improvement. JAMA 1999;282:1458-65.

Table 1: The respondents' characteristics of the first and second rounds were not significantly different in the respects of sex, age, years of practice, specialty, and clinical setting

Characteristics	First round respondents (N = 94)		Second round respondents (N = 84)		Significant differences
No. Of male	66	(70.2%)	62	(73.8%)	Chi-square = 0.28, df = 1, p = 0.59
Mean age (SD)	42.3	(10.5)	42.7	(9.6)	t = 0.22, df = 176, p = 0.83
Mean years of practice (SD)	15.3	(9.7)	15.4	(9.0)	t = 0.90, df = 176, p = 0.93
Specialty (adult : child)	85 9	(90.4%): (9.6%)	79 5	(94.0%): (6.0%)	Chi-square = 0.80, df = 1, p = 0.37
Clinical setting * : UH : P/NH: GH: PH/C	 26 38 19 11	 (27.7%): (40.4%): (20.2%): (11.7%)	 25 35 19 5	 (29.8%): (41.7%): (22.6%): (5.9%)	 Chi-square = 1.84, df = 3, p = 0.61

* UH = university hospital, P/NH = psychiatric or neurological hospital, GH = general hospital. PH/C = private hospital or clinic

Table 2 : Psychiatrists' preferred interventions in management of TRS

Interventions	No. of psychiatrists accepting in the first round respondents (N = 94) N (%)	No. of psychiatrists accepting in the second round respondents (N = 84) N (%)	Differences
1. Decreasing the dose of on-going CA	15 (16.0)	16 (19)	Chi-square = 0.30, df = 1, p = 0.59
2. Increasing the dose of on-going CA	37 (39.4)	33 (39.3)	Chi-square = 0.00, df = 1, p = 0.99
3. Switching to another CA	67 (71.3)	57 (67.9)	Chi-square = 0.25, df = 1, p = 0.62
4. Switching to clozapine alone	55 (58.5)	51 (60.7)	Chi-square = 0.09, df = 1, p = 0.77
5. Switching to risperidone alone	74 (78.7)	64 (76.2)	Chi-square = 0.16, df = 1, p = 0.69
6. Switching to olanzapine alone	43 (45.7)	45 (53.6)	Chi-square = 1.09, df = 1, p = 0.30
7. Switching to quetiapine alone	10 (10.6)	16 (19.0)	Chi-square = 2.51, df = 1, p = 0.11
8. Switching to lithium alone	1 (1.1)	0 (0.0)	Chi-square = 0.90, df = 1, p = 0.34
9. Switching to carbamazepine alone	1 (1.1)	1 (1.2)	Chi-square = 0.01, df = 1, p = 0.94
10. Switching to sodium valproate alone	1 (1.1)	0 (0.0)	Chi-square = 0.90, df = 1, p = 0.34
11. Switching to benzodiazepine alone	1 (1.1)	0 (0.0)	Chi-square = 0.90, df = 1, p = 0.34
12. Adding lithium to the on-going CA	46 (48.9)	44 (52.4)	Chi-square = 0.21, df = 1, p = 0.65
13. Adding carbamazapine to the on-going CA	63 (67.0)	47 (56.0)	Chi-square = 2.30, df = 1, p = 0.13
14. Adding sodium valproate to the on-going CA	32 (34.0)	22 (26.2)	Chi-square = 1.29, df = 1, p = 0.26
15. Adding benzodiazepine to the on-going CA	22 (23.4)	25 (29.8)	Chi-square = 0.92, df = 1, p = 0.34
16. Adding propranalol to the on-going CA	7 (7.4)	10 (11.9)	Chi-square = 1.02, df = 1, p = 0.31
17. Adding amineptine to the on-going CA	6 (6.4)	2 (2.4)	Chi-square = 1.66, df = 1, p = 0.20
18. Adding SSRI to the on-going CA	22 (23.4)	14 (16.7)	Chi-square = 1.25, df = 1, p = 0.26
19. Adding TCA to the on-going CA	15 (16.0)	9 (10.7)	Chi-square = 1.05, df = 1, p = 0.31
20. Adding a novel antipsychotic to the on-going CA	32 (34.0)	29 (34.5)	Chi-square = 0.01, df = 1, p = 0.95