表4. A公立病院調査対象病棟での「重症度」基準該当患者数

調査病棟	評価基準	調査日1	調査日2	調査日3	調査日4	調査日5
H01A	①A得点：3点以上	0	0	0	0	0
	②B得点：3点以上	12	11	13	13	13
	①+② 該当数合計	12	11	13	13	13
	全患者に占める割合	60%	55%	65%	65%	65%
H01B	①A得点：3点以上	1	1	0	0	1
	②B得点：3点以上	15	16	15	16	17
	①+② 該当数合計	15	16	15	16	17
	全患者に占める割合	65%	80%	71%	72%	74%
H01C	①A得点：3点以上	4	4	4	4	4
	②B得点：3点以上	30	30	29	29	30
	①+② 該当数合計	31	30	29	29	30
	全患者に占める割合	64%	62%	60%	60%	61%
H01D	①A得点：3点以上	0	0	0	0	0
	②B得点：3点以上	20	22	24	24	24
	①+② 該当数合計	20	22	24	24	24
	全患者に占める割合	64%	65%	66%	66%	66%

注：特定集中治療室管理料の算定に用いられる「重症度」基準

＊モニタリング及び処置等に係る得点（A得点）が3点以上、または患者の状況等に係る得点（B得点）が3点以上

表 5.　A 公立病院調査対象病棟での「重症度・看護必要度」基準該当患者数

調査病棟	評価基準	調査日1	調査日2	調査日3	調査日4	調査日5
H01A	①A 得点：3点以上	0	0	0	0	0
	②B得点：7点以上	11	11	13	13	12
	①+② 該当数合計	11	11	13	13	12
	全患者に占める割合	55%	55%	65%	65%	60%
H01B	①A 得点：3点以上	5	7	4	5	6
	②B得点：7点以上	13	15	12	13	15
	①+② 該当数合計	13	15	12	13	15
	全患者に占める割合	56%	75%	57%	59%	65%
H01C	①A 得点：3点以上	4	4	4	4	5
	②B得点：7点以上	33	32	31	31	32
	①+② 該当数合計	33	32	31	31	32
	全患者に占める割合	69%	66%	64%	64%	65%
H01D	①A 得点：3点以上	2	2	3	2	2
	②B得点：7点以上	20	22	22	23	22
	①+② 該当数合計	20	22	22	23	22
	全患者に占める割合	64%	65%	61%	64%	61%

注:ハイケアユニット入院管理料の算定に用いられる「重症度・看護必要度」基準
＊モニタリング及び処置等に係る得点（A 得点）が 3 点以上、または患者の状況等に係る得点（B 得点）が 7 点以上

表 6.　A 公立病院調査対象病棟での「一般病棟用の重症度・看護必要度」基準該当患者数

調査病棟	評価基準	調査日1	調査日2	調査日3	調査日4	調査日5
H01A	A 得点 2 点以上かつB得点 3 点以上	0	0	2	0	0
	全患者に占める割合	0	0	15%	0%	0%
H01B	A 得点 2 点以上かつB得点 3 点以上	5	7	4	6	7
	全患者に占める割合	22%	35%	19%	27%	30%
H01C	A 得点 2 点以上かつB得点 3 点以上	11	13	13	13	14
	全患者に占める割合	23%	27%	27%	27%	28%
H01D	A 得点 2 点以上かつB得点 3 点以上	10	4	5	6	5
	全患者に占める割合	32%	12%	14%	16%	14%

注:7 対1入院基本料の算定で用いられる「一般病棟用の重症度・看護必要度」基準
＊モニタリング及び処置等に係る得点（A 得点）が 2 点以上、かつ患者の状況に係る得点（B 得点）が 3 点以上

資料1

〈「看護必要度」に関する調査項目（Ｖｅｒ．４対応）〉

チェック項目		選択肢		
A モニタリング及び処置等に関する項目		0点	1点	2点
1	創傷処置	なし	あり	
2	蘇生術の施行	なし	あり	
3	血圧測定	0～4回	5回以上	
4	時間尿測定	なし	あり	
5	呼吸ケア	なし	あり	
6	点滴ライン同時３本以上	なし	あり	
7	心電図モニター	なし	あり	
8	輸液ポンプの使用	なし	あり	
9	動脈圧測定（動脈ライン）	なし	あり	
10	シリンジポンプの使用	なし	あり	
11	中心静脈圧測定（中心静脈ライン）	なし	あり	
12	人工呼吸器の装着	なし	あり	
13	輸血や血液製剤の使用	なし	あり	
14	肺動脈圧測定（スワンガンツカテーテル）	なし	あり	
15	特殊な治療法等（CHDF、IABP、PCPS、補助人工心臓、ICP 測定）	なし	あり	
16	専門的な治療・処置	なし		あり
｜ 22	（①悪性腫瘍剤の使用 ②薬注射薬の使用 ③放射線療法 ④免疫抑制剤の使用 ⑤昇圧在の使用 ⑥抗不整脈剤の使用 ⑦ドレナージの管理）		実施ありの番号→	
			A 得点	

B 患者の状況等に関する項目		0点	1点	2点
23	床上安静の指示	なし	あり	
24	どちらかの手を胸元まで持ち上げられる	できる	できない	
25	寝返り	できる	何かにつかまればできる	できない
26	起き上がり	できる	できない	
27	座位保持	できる	支えがあればできる	できない
28	移乗	できる	見守り・一部介助が必要	できない
29	移動方法	介助を要しない移動	介助を要する移動 （搬送を含む）	
30	口腔清潔	できる	できない	
31	食事摂取	介助なし	一部介助	全介助
32	衣服の着脱	介助なし	一部介助	全介助
33	他者への意思の伝達	できる	できる時と できない時がある	できない
34	診療・療養上の指示が通じる	はい	いいえ	
35	危険行動	ない	ある	
			B 得点	

チェック項目		選択肢		
(A 得点 任意アセスメント項目)		0	1	2
36	身体的な症状の訴え	なし	あり	
37	計画に基づいた 10 分間以上の指導	なし	あり	
38	(看護計画に基づいた)10 分間以上の意思決定支援	なし	あり	
39	手術	なし	手術前日	手術当日
	※主な術式名( ) 手術時間( )			
40	退院予定	なし	あり	
	※退院まで( )日			

< 精神科での治療・患者の状況に関する調査項目>

チェック項目		選択肢		
(研究班で追加)		0	1	2
1	行動制限①(閉鎖処遇・外出制限)	なし	あり	あり (棟外看護師同伴)
	※行動制限が必要となった理由・原因 ( )			
2	行動制限②(隔離)	なし	あり(時間開放)	あり(終日隔離)
	※行動制限が必要となった理由・原因 ( )			
3	行動制限③(身体拘束)	なし	胴抑制	四肢・肩抑制を含む
	→ 肺血栓塞栓症予防の実施	なし	あり	
	→ 注射薬(静脈内・筋注)による鎮静の実施	なし	あり	
	※行動制限が必要となった理由・原因 ( )			
4	精神科での特殊な治療(ECT)	なし	あり	
5	自殺念慮・企図	なし	過去 1 年にエピソードあり (継続的査定を要する)	1 週間以内に具体的言辞・行動あり
6	暴力行為	なし	過去 1 年にエピソードあり (継続的査定を要する)	1 週間以内に具体的言辞・行動あり
6	食物摂取・嚥下の問題 (詰込みによる窒息)	なし	過去 1 年にエピソードあり (継続的査定を要する)	1 週間以内に発生
7	自己管理①(衣類・日用品・タバコ・嗜好品等)	できる	できる時と できない時がある	できない
8	自己管理②(貴重品・金銭)	できる	できる時と できない時がある	できない
9	自己管理③(内服薬)	できる	できる時と できない時がある	できない
10	身体合併症(専門医の診断・専門的治療を要する)	なし	現状維持・再燃予防	急性期治療中
	※診断名( ) 治療内容( )			
11	看護師の対応を要する特記事項の発生	なし	あり	
	※特記事項の内容(外出・外泊・離院・無断外出・ルート自己抜去など)			

〈 患者基礎情報 〉

■ 調査時点での治療期間

治療期間

1. 入院当日～7 日目　2. 8～14 日目　3. 15～21 日目　4. 22～28 日目
5. 29～35 日目　6. 36～42 日目　7. 43～49 日目　8. 50～56 日目
9. 57～63 日目　10. 64～70 日目　11. 71～77 日目　12. 78～84 日
13. 85 日以上

■ 年代

年代

1. 10 代　2. 20 代　3. 30 代　4. 40 代
5. 50 代　6. 60 代　7. 70 代　8. 80 歳以上

■ 性別

性別

1. 男性
2. 女性

■ 精神科での診断リスト

主な診断名

1. 症状性を含む器質性精神障害
2. 精神作用物質使用による精神及び行動の障害
3. 統合失調症，統合失調症型障害及び妄想性障害
4. 気分[感情]障害
5. 神経症性障害，ストレス関連障害及び身体表現性障害
6. 生理的障害及び身体的要因に関連した行動症候群
7. 成人の人格及び行動の障害
8. 知的障害〈精神遅滞〉
9. その他

1)
2)
3)

■ 精神症状リスト

主な精神症状

1. せん妄・もうろう状態
2. 健忘・記銘力障害
3. 幻覚
4. 妄想
5. 連合弛緩・滅裂思考
6. 不安焦燥状態
7. 抑うつ状態
8. 躁状態
9. 無為・自閉

1)
2)
3)

■ 精神科的治療

主な精神科治療

1. 薬物療法
2. 精神療法（個人）
3. 集団精神療法
4. 作業療法・レクリエーション療法
5. SST
6. その他

1)
2)
3)

※行動制限、ECTを除く

< 病棟管理　基礎情報 >

■ 病棟機能(診療科名など):

■ 病床数

一般床（多床）	一般床（個室）	観察室	保護室（隔離室）	運用病床合計
床	床	床	床	床

■ 入院基本料:

■ 看護師　配置数　　名　　■ 看護補助者　配置数　　名

■ 勤務時間内訳

（勤務区分例）

シフト1	シフト2	シフト3
23:30	8:00	16:00
↓	↓	↓
8:30	16:30	24:00

勤務区分	シフト1	シフト2	シフト3	シフト4	シフト5
勤務開始時刻					
↓	↓	↓	↓	↓	↓
勤務終了時刻					
勤務時間	分	分	分	分	分
休憩時間	分	分	分	分	分
実動時間	分	分	分	分	分

＜ 病棟管理　調査日情報 ＞

■病床利用状況

入院	転入	退院	転出	患者総数

※身体合併症治療患者数 [　　]

■ 勤務体制　※網掛け部分の記載は不要です。

勤務区分	シフト1	シフト2	シフト3	シフト4	シフト5
実動時間	(　　)	(　　)	(　　)	(　　)	(　　)
A: 看護師	[　　]名	[　　]名	[　　]名	[　　]名	[　　]名
(実動時間×勤務者数)	(　　分X	分X	分X	分X	分)
B: 看護補助者	[　　]名	[　　]名	[　　]名	[　　]名	[　　]名
(実動時間×勤務者数)	(　　分X	分X	分X	分X	分)

※看護管理者の患者治療・ケアの参加時間　[　　]分

※他部署からの応援スタッフによる対応　(　有　・　無　)

看護師: 勤務者総数	[　　]名	総実動時間	[　　]
看護補助者: 勤務者総数	[　　]名	総実動時間	[　　]

■ 時間外勤務の発生状況

勤務区分	シフト1	シフト2	シフト3	シフト4	シフト5
看護師: 発生人数	[　　]名	[　　]名	[　　]名	[　　]名	[　　]名
合計時間	[　　]分	[　　]分	[　　]分	[　　]分	[　　]分
看護補助者: 発生人数	[　　]名	[　　]名	[　　]名	[　　]名	[　　]名
合計時間	[　　]分	[　　]分	[　　]分	[　　]分	[　　]分

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こころの健康科学研究事業

精神科救急医療、特に身体疾患や認知症疾患合併症例の対応に関する研究

平成 20 年度　総括・分担研究報告書

主任研究者　黒澤　尚

平成 21 年（2009）年 3 月

Ⅲ. 研究成果の刊行に関する一覧表

書籍

著者氏名	論文タイトル名	書籍全体の編集者名	書　籍　名	出版社名	出版地	出版年	ページ
なし							

雑誌

発表者氏名	論文タイトル名	発表誌名	巻号	ページ	出版年
Hatta K, Kawabata T, Yoshida K, Hamakawa H, Wakejima T, Furuta K, Nakamura M, Hirata T, Usui C, Nakamura H, Sawa Y （八田耕太郎，川畑俊貴，吉田健一，濱川浩，分島徹，古田光，中村満，平田豊明，臼井千恵，中村裕之，澤温）	Olanzapine orally disintegrating tablet versus risperidone oral solution in the treatment of acutely agitated psychotic patients.	General Hospital Psychiatry	30巻4号	367-371	2008
Hatta K, Nakamura H, Usui C, Kobayashi T, Kamijo K, Hirata T, Awata S, Kishi Y, Arai H, Kurosawa H （八田耕太郎，中村裕之，臼井千恵，小林孝文，上條吉人，平田豊明，栗田主一，岸泰宏，新井平伊，黒澤尚）	Medical and psychiatric comorbidity at psychiatric beds in general hospitals: a cross-sectional study in Tokyo.	Psychiatry and Clinical Neurosciences			(in press)

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Olanzapine orally disintegrating tablet vs. risperidone oral solution in the treatment of acutely agitated psychotic patients

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Olanzapine orally disintegrating tablet vs. risperidone oral solution in the treatment of acutely agitated psychotic patients

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Abstract

Objective: Efficacy and tolerability of risperidone oral solution (RIS-OS) and olanzapine orally disintegrating tablet (OLZ-ODT) were compared for the treatment of acute psychotic agitation.
Method: During a 2-month period, patients scoring ≥15 on the Excited Component for Positive and Negative Syndrome Scale (PANSS-EC) were assigned to treatment with OLZ-ODT (n=34) or RIS-OS (n=53) on psychiatric emergency situations, and assessed every 15 min.
Results: Two (OLZ-ODT and RIS-OS) by five (0-, 15-, 30-, 45- and 60-min time points) repeated-measures analysis of variance revealed only a significant main effect of time course on PANSS-EC (F=82.2, P<0001). No differences in the number of patients receiving additional injection due to worsening were found (OLZ-ODT, 11.8%; RIS-OS, 9.4%). No differences in rate of extrapyramidal symptoms and patient satisfaction with assigned treatment were found. However, patients in the OLZ-ODT group recovered significantly more from tachycardia than those in the RIS-OS group (t=2.17, P=.03).
Conclusion: OLZ-ODT and RIS-OS treatments yielded similar improvements in acutely agitated patients who accepted oral medication. However, on one physiological parameter (i.e., tachycardia) OLZ-ODT might be superior to RIS-OS. Physiological indicators may also be useful for measuring levels of agitation.

Keywords: Psychiatric emergency; Agitation; heart rate; Blood pressure; PANSS-EC

1. Introduction

In psychiatric emergency settings, acutely agitated psychotic patients are treated with either parenteral or oral medication. The latter is selected as long as the patient does not refuse oral medication, as no differences in efficacy and tolerance have been found between oral and intramuscular medications [1,2]. Although oral medications include various antipsychotic drugs, first-generation antipsychotics have been changed to second-generation antipsychotics, such as risperidone and olanzapine [3]. These two drugs are available as oral solutions (OSs) [4] and orally disintegrating tablets (ODTs) [5], which seem to have the advantage of ease of use in the emergency situation

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compared to tablets. However, no studies have compared risperidone OS vs. olanzapine ODT in psychiatric emergency settings.

In the present study, efficacy and tolerability of risperidone OS and olanzapine ODT were compared for patients with acute psychotic agitation. The design was pseudorandomized, as we intended to obtain more realistic data than a randomized controlled study and less arbitrary data than a naturalistic study.

2. Methods

2.1. Study design

This was a 2-month (May–June 2007) pseudorandomized, open-label, flexible-dose, multicenter study of acutely agitated psychotic patients assigned to treatment with olanzapine ODT or risperidone OS.

2.2. Study population

Participants were recruited from seven psychiatric emergency department services for evaluation and treatment of acute agitation. All study protocols were approved by the institutional review board at each site, and written informed consent was obtained from patients or their legally authorized representatives. As there was no alteration of patient care, the institutional review board agreed that consent to use the data could be obtained after resolution of the agitation. Patients with a score ≥15 on the Excited Component for Positive and Negative Syndrome Scale (PANSS-EC: excitement; hostility; tension; uncooperativeness; poor impulse control) [6,7] were included in the study when visiting or brought to the psychiatric emergency department services.

Patients who refused oral medication were excluded and were instead treated with injections. Although patients visiting psychiatric emergency departments do not always receive medication, there were no patients without medication among those with a score >15 on PANSS-EC during the study period.

2.3. Study treatments

Patients who visited or were brought in to psychiatric emergency department services in May were assigned to treatment with olanzapine ODT, and those attending in June were assigned to treatment with risperidone OS. If a patient had a history of effective treatment with olanzapine or risperidone, the patient was treated with the same drug. Initial doses of olanzapine ODT and risperidone OS were 10 and 3 mg, respectively, considering dose equivalency [8]. The same dose could be given at anytime if the patient remained agitated. It is not ethical to keep patients extremely agitated. Treatment with adjunctive drugs during the first 1 h of treatment was not allowed. Anticholinergic medications were also not permitted unless acute extrapyramidal side effects appeared.

2.4. Assessments

The screening evaluation included medical history, physical examination, measurement of vital signs and laboratory tests. Diagnoses were made according to *ICD-10* criteria.

Efficacy was measured in two domains: psychopathology and patient satisfaction. Psychopathology was assessed by PANSS-EC and Clinical Global Impression (CGI) [9]. PANSS-EC was assessed at baseline and every 15 min over the course of an hour (0, 15, 30, 45 and 60 min). CGI Severity (CGI-S) rating scale was assessed at baseline, and CGI Change (CGI-C) rating scale was assessed at 60 min after medication. Raters were involved with treatment. They were trained in outcome parameters using the same DVD training video, but reliability was not determined. Patient satisfaction was assessed at discharge according to three grades: (1) satisfied with assigned treatment, (2) between satisfied and dissatisfied and (3) dissatisfied with assigned treatment.

To assess safety, blood pressure and heart rate were measured at baseline, and 30 and 60 min after treatment. For extrapyramidal symptoms, including akathisia, parkinsonian signs and dyskinetic movements, the Drug-induced Extrapyramidal Symptom Scale [10] was utilized. The most severe scores recorded at any time during 12 h were reported.

2.5. Statistical analysis

Statistical analyses were performed using SPSS version 11.0J software (SPSS, Tokyo, Japan). Differences between categorical variables in patient demographics and clinical characteristics were calculated using Fisher's Exact Test. Differences between sequential variables were calculated using Student's t test. If data were not sampled from gaussian distributions, a nonparametric test (Mann–Whitney test) was used. Two (olanzapine ODT and risperidone OS) by five (0-, 15-, 30-, 45- and 60-min time points) or two-by-three (0-, 30- and 60-min time points) repeated-measures analysis of variance (ANOVA) was used for the analysis of data over time. All statistical tests were two-tailed. Values of $P<.05$ were regarded as statistically significant.

3. Results

During the study period, 853 patients visited or were brought into the seven psychiatric emergency department services. Of these, 208 patients scored ≥15 on PANSS-EC. Among these, 90 patients did not refuse oral medication. As written informed consent was not obtained from 3 patients, their data could not be utilized. Consequently, a total of 87 (97%) patients were included in the study. According to the methods described above, 34 patients were assigned to treatment with olanzapine ODT and 53 patients were assigned to treatment with risperidone OS. Table 1 presents baseline characteristics for the two treatment groups. No significant differences in mean age, gender (percentage of men), percentage of first-time antipsychotic use, the number

Table 1
Baseline characteristics of patients treated with olanzapine ODT or risperidone OS

Characteristics	Olanzapine ODT (n=34)	Risperidone OS (n=53)	P
Mean age, years (S.D.)	37.7 (15.4)	38.4 (13.5)	.82
Gender, % men (n)	41.2 (14)	62.3 (33)	.08
First time antipsychotic use, % (n)	26.5 (9)	28.3 (15)	1.00
The number assigned by past experience to each of the medication options, % (n)	8.8 (3)	18.9 (10)	.23
Patients who had not stopped antipsychotics just before visiting hospital, % (n)	38.2 (13)	30.2 (16)	.49
PANSS-EC, mean score (S.D.)	18.6 (5.0)	20.7 (6.3)	.10
CGI-S, mean score (S.D.)	4.9 (1.1)	5.2 (1.1)	.30
Mean systolic blood pressure, mmHg (S.D.)	128 (19)	136 (23)	.10
Mean diastolic blood pressure, mmHg (S.D.)	78 (14)	83 (18)	.26
Mean heart rate, beats/min (S.D.)	90 (16)	88 (13)	.62
Diagnoses (*ICD-10*)			
F2, % (n)	79.4 (27)	62.3 (33)	.10
F3, % (n)	11.8 (4)	15.1 (8)	.76
Others, % (n)	8.8 (3)	22.6 (12)	

Diagnoses were made according to *ICD-10* at discharge. CGI-S, Clinical Global Impressions Severity rating scale from 1 to 7; F2, schizophrenia, schizotypal and delusional disorders; F3, mood disorders.

assigned by past experience to each of the medication options, percentage of patients who had not stopped antipsychotics just before visiting hospital, mean PANSS-EC

Table 2
Differences in outcome between patients treated with olanzapine ODT and patients treated with risperidone OS

Characteristics	Olanzapine ODT (n=34)	Risperidone OS (n=53)	p
Mean CGI-C, score (S.D.)	2.8 (1.3)	3.2 (1.4)	.22
Additional injection due to worsening, % (n)	11.8 (4)	9.4 (5)	.73
Mean change in systolic blood pressure (mmHg)	−10.9	−6.2	.41
Range	−46 to 20	−52 to 91	
Mean change in diastolic blood pressure (mmHg)	−6.8	−5.5	.71
Range	−48 to 17	−35 to 27	
Mean change in heart rate (beats/min)*	−9.2	1.1	.03
Range	−42 to 16	−32 to 42	
Extrapyramidal symptoms, % (n)	0 (0)	5.7 (3)	.28
Patient satisfaction with each treatment, % (n)	1.5 (0.6)	1.5 (0.6)	.91

Patients received injections due to refusal to take more oral medication. Mean change in systolic blood pressure, diastolic blood pressure or heart rate was defined as mean of the difference between value at 60 min and that at baseline, respectively. Extrapyramidal symptoms were evaluated using the Drug-Induced Extra-Pyramidal Symptoms Scale for 12 h. Patient satisfaction with each treatment was evaluated at discharge as (1) satisfied, (2) between satisfied and dissatisfied and (3) dissatisfied. All statistical tests were two-tailed. Values of P<.05 were regarded as statistically significant. CGI-C, Clinical Global Impressions Change rating scale from 1 to 7.
* P<.05.

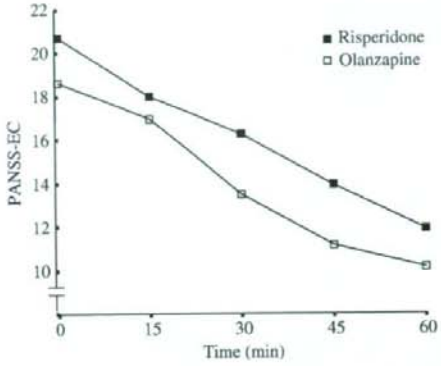

Fig. 1. Changes in PANSS-EC in the olanzapine ODT group (n=34) and risperidone OS group (n=53). To test for the effects of treatment on PANSS-EC, two (olanzapine ODT and risperidone OS) by five (0-, 15-, 30-, 45- and 60-min time points) repeated-measures ANOVA was used.

score, mean CGI-S score and the distribution of diagnoses were seen between treatment groups.

Mean (±S.D.) doses of olanzapine ODT and risperidone OS were 10.4±3.3 and 3.3±2.6 mg, respectively, suggesting dose equivalency was kept. Over the course of the trial, four patients (11.8%) in the olanzapine ODT group and five patients (9.4%) in the risperidone OS group received additional injection due to worsening (Table 2).

Changes in PANSS-EC in both groups are shown in Fig. 1. Repeated-measures ANOVA revealed a significant main effect of time course (F=82.2, P<.0001) but no significant main effect of treatment (F=2.94, P=.09) on PANSS-EC. No significant interaction was seen between time course and treatment on PANSS-EC (F=0.88, P=. 41). PANSS-EC scores in both groups thus progressively decreased. Likewise, no differences in mean CGI-C score between groups were found (Table 2).

Physiologically, no significant differences were seen between groups in mean baseline systolic blood pressure (t=1.68, P=.10), diastolic blood pressure (t=1.15, P=.26) or heart rate (t=0.50, P=.62) (Table 1). Mean changes in these vital signs, that is, mean of the difference between values at 60 min and those at baseline, were then compared between groups. Remarkably, mean change in heart rate in the olanzapine ODT group was significantly greater than that in the risperidone OS group (t=2.17, P=.03, Table 2). In the olanzapine ODT group, however, only one patient showed bradycardia (47 beats/min) at 60 min, which was a decline from 76 beats/min at baseline. There were no significant differences in mean changes in systolic blood pressure and diastolic blood pressure between groups, respectively (Table 2). Repeated-measures ANOVA revealed a significant main effect of time course (F=9.70, P<.0001) but no significant main effect of treatment (F=3.47, P=.07) on systolic blood pressure (Fig. 2A). No significant interaction was identified between time course and treatment on systolic

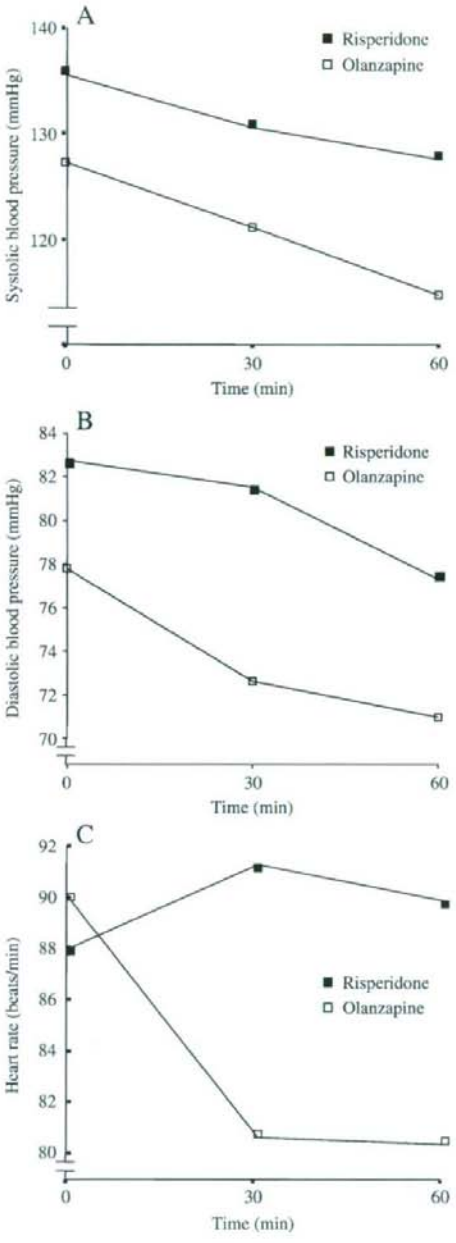

Fig. 2. Changes in systolic blood pressure (A), diastolic blood pressure (B) and heart rate (C) in the olanzapine ODT group and risperidone OS group. To test for the effects of treatment on systolic blood pressure (A), diastolic blood pressure (B) and heart rate (C), two (olanzapine ODT and risperidone OS) by three (0-, 30- and 60-min time points) repeated-measures ANOVA was used.

blood pressure (F=0.54, P=.56). Similarly, repeated-measures ANOVA revealed a significant main effect of time course (F=7.63, P=.002) but no significant main effect of treatment (F=3.44, P=.07) on diastolic blood pressure (Fig. 2B). No significant interaction was identified between time course and treatment on diastolic blood pressure (F=0.80, P=.43). Meanwhile, repeated-measures ANOVA revealed a significant interaction between time course and treatment with regard to heart rate (F=4.68, P=.02), although significant main effects of time course (F=1.60, P=.21) or treatment (F=1.93, P=.17) on heart rate were not seen (Fig. 2C).

No significant difference was seen in rate of extrapyramidal symptoms (Table 2), and no intolerable side effects appeared in either group.

No differences in patient satisfaction with the assigned treatment were found (Table 2).

4. Discussion

The results that repeated-measures ANOVA revealed a significant main effect of time course without a significant main effect of treatment and a significant interaction between time course and treatment on PANSS-EC suggest the similar effectiveness of both interventions for acutely agitated psychotic patients. The similar rates between groups of patients who received additional injection due to worsening support this.

Mean baseline heart rate in the olanzapine ODT group (90±16 beats/min) and risperidone OS group (88±13 beats/min) were similar to those reported previously in psychiatric emergency cases (90.9± 17.0 beats/min) [11]. These baseline heart rates are much higher than those reported in psychiatric outpatients (63.4±7.4 beats/min) [11] and drug-free schizophrenic cases (77.72±9.47 beats/min) [12]. Increased heart rate may thus have resulted from the psychiatric emergency pathophysiology, that is, hypersympathetic state.

Interestingly, mean change in heart rate in the olanzapine ODT group was significantly greater than that in the risperidone OS group. Furthermore, repeated-measures ANOVA revealed a significant interaction between time course and treatment without significant main effects of either time course or treatment on heart rate. However, olanzapine does not generally cause bradycardia [13,14], although slight reductions in mean orthostatic blood pressure have been reported [14]. In fact, only a patient showed slight bradycardia (47 beats/min) at 60 min in the olanzapine ODT group, and others were within normal range. In other words, patients in the olanzapine ODT group had greater reductions in tachycardia associated with hypersympathetic state than those in the risperidone OS group. Thus, the reduction in mean heart rate in the olanzapine ODT group can be considered not as a side effect but as a calming effect of the medication. To our knowledge, this is a new finding. In terms of achieving a physiological calming effect, olanzapine ODT might be superior to risperidone OS. Another explanation is that the lack of a decline in heart rate for the risperidone OS group may have been associated with a more hyper-aroused state in the risperidone OS group compared to the olanzapine ODT group.

The design of the current study was similar to designs reported in previous studies of emergency patients [15,16]. In previous studies, treatment decisions were made as a matter of clinical policy, and consent to participate in the studies was obtained subsequently. To reflect real practices, such a design should be allowed.

In conclusion, both olanzapine ODT and risperidone OS treatment yielded similar improvements in acutely agitated patients who accepted oral medication. Both drugs were well tolerated and achieved similar levels of patient satisfaction. However, in terms of achieving a physiological calming effect, olanzapine ODT might be superior to risperidone OS. Further study with a larger subject population is needed to confirm these findings. Physiological indicators such as blood pressure and heart rate are essential in clinical practice but may also be useful to measure levels of agitation as along with PANSS-EC.

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