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ScienceDirect

Comprehensive Psychiatry 59 (2015) 91–97

COMPREHENSIVE PSYCHIATRY

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A cross-sectional survey to investigate the prevalence of pain in Japanese patients with major depressive disorder and schizophrenia

Taro Kishi[a,*], Yuki Matsuda[a], Tomohiko Mukai[a], Shinji Matsunaga[a], Ichiro Yasue[b], Kiyoshi Fujita[b], Tomo Okochi[c], Shigeki Hirano[c], Yusuke Kajio[d], Toshihiko Funahashi[d], Kaku Akamatsu[e], Kei Ino[f], Momoko Okuda[f], Hideaki Tabuse[f], Nakao Iwata[a]

[a]*Department of Psychiatry, Fujita Health University School of Medicine, Toyoake, Aichi 470-1192, Japan*
[b]*Department of Psychiatry, Okehazama Hospital, Toyoake, Aichi 470-1168, Japan*
[c]*Department of Psychiatry, Toyota Memorial Hospital, Toyota, Aichi 471-8513, Japan*
[d]*Department of Psychiatry, Jindai Hospital, Toyota, Aichi 470-0361, Japan*
[e]*Department of Psychiatry, Jindai Clinic, Nagoya, Aichi 470-0361, Japan*
[f]*Department of Psychiatry, Holy Cross Hospital, Toki, Gifu 509-5142, Japan*

Abstract

We conducted a cross-sectional survey to assess the prevalence of physical pain in Japanese major depressive disorder (MDD) and schizophrenia (SZ) patients as well as in healthy controls (HCs). We also examined the association between their psychopathology and characteristics of pain according to a face-to-face survey by an experienced psychiatrist and psychologist. We analyzed 233 HCs, 94 MDD patients, and 75 SZ patients using the McGill Pain Questionnaire (MPQ) and SF-8 (all participants), the Hamilton Depression Rating Scale 21 items (MDD patients), and the Positive and Negative Symptom Scale (SZ patients). Although MDD patients experienced more pain than HCs, there was no difference in the prevalence of pain between SZ patients and HCs. Moreover, HCs with pain did not have higher SF-8 total scores than those without pain, whereas both MDD and SZ patients with pain had higher SF-8 total scores than those without pain. The severity of psychopathology in MDD and SZ patients was also positively associated with both the prevalence of pain and MPQ scores. MPQ scores were also associated with positive symptoms in SZ patients. Considering these results, physicians need to query MDD patients about physical pain during examination if they are to ensure a favorable and quick response to treatment. The severity of positive symptoms (i.e., clinical status) in SZ patients might also be associated with pain sensitivity, and warrants further investigation.

1. Introduction

Patients with psychiatric disorders, such as major depressive disorder (MDD) and schizophrenia (SZ), differ in the prevalence and intensity of pain compared with healthy controls (HCs) [1–5]. For example, MDD is associated with a higher prevalence of pain than HCs [1–3]. A Web-based survey was recently conducted to assess the perception of pain in Japanese patients with depression [4]; the study revealed that 64.0% of patients with depression experience at least one painful symptom. Many patients with depression are aware of having some kind of pain as a result of the study, and only 61.7% physicians ask their patients about pain during a consultation [4]. On the other hand, the number of studies on prevalence of pain in SZ is small. A recent review [5] states that SZ patients have lower prevalence of pain as well as lower intensity of pain than do those with other psychiatric disorders [5]. Pain related to medical conditions (e.g., myocardial infarction) appears to have a lower prevalence in patients with SZ than in HCs [5]. However, such a difference was not observed for pain without an apparent medical reason [5].

However, no studies have evaluated the prevalence of pain in Japanese patients with psychiatric disorders using face-to-face evaluation, and no studies have evaluated an association between the symptom of pain using the McGill Pain Questionnaire (MPQ) [6] and psychopathology of SZ using the Positive and Negative Symptom Scale (PANSS) [7]. Thus, we conducted a cross-sectional survey to assess the prevalence

* Corresponding author. Tel.: +81 562 93 9250; fax: +81 562 93 1831.
E-mail address: tarok@fujita-hu.ac.jp (T. Kishi).

http://dx.doi.org/10.1016/j.comppsych.2015.02.004
0010-440X/

of pain in Japanese MDD and SZ patients as well as in HC. We also examined the association between their psychopathology and characteristics of pain according to a face-to-face survey by an experienced psychiatrist and psychologist.

2. Methods

2.1. Participants

We recruited HCs and outpatients who were diagnosed with MDD or SZ based on DSM-IV-TR (Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision; 2000) using the Structured Clinical Interview for DSM-IV Axis I Disorders (SCID-I). However, the patients who were a few weeks short of discharge from the hospital (i.e., clinically stable patients) were also recruited. None of the participants met the following exclusion criteria: mental retardation, other cognitive disorders, women who are pregnant or breast feeding, patients with serious, unstable medical conditions, or patients who received electroconvulsive therapy during the three months before enrollment in our study. The appropriate institutional review boards approved the study at each site, and the patients and/or their legal guardians provided signed informed consent to participate.

2.2. Survey

All participants were tested using MPQ and SF-8 [8]. In addition, MDD patients were assessed using the Hamilton Depression Rating Scale 21 items (HAMD-21) [9] and SZ patients were evaluated using PANSS.

2.3. Statistical analysis

Clinical characteristics were compared among the three groups (HCs, MDD patients, and SZ patients) using the χ^2 test for categorical variables and analysis of variance (ANOVA) for continuous variables. The p value < 0.05 was assumed to denote statistical significance. We tested the total scores on MPQ, HAMD-21, and PANSS at baseline using the Shapiro–Wilk test; we confirmed that all data were normally distributed (data not shown).

Table 1
Participant demographics at baseline.

	Healthy control (n = 233)	Major depressive disorder (n = 94)	Schizophrenia (n = 75)	p
Age at recruitment (years, mean (SD))	37.0 (8.85)	52.5 (17.1)	47.7 (14.3)	<**0.0001**
Sex (males/females), n (%)	159 (68.2)/74 (31.8)	36 (38.3)/58 (61.7)	39 (52.0)/36 (48.0)	<**0.0001**
Educational history (years, mean (SD))	15.1 (1.89)	13.3 (2.02)	12.2 (2.24)	<**0.0001**
Marital status (marriage/not marriage), n (%)	146 (62.7)/87 (37.3)	63 (67.0)/31 (33.0)	17 (22.7)/58 (77.3)	<**0.0001**
Housemate, (mean (SD))	2.3 (1.1)	2.5 (1.3)	2.2 (1.1)	0.195
Employment status (F/P/N/S), n (%)	221 (94.9)/10 (4.3)/2 (0.9)/0 (0.0)	39 (41.5)/7 (7.5)/45 (47.9)/3 (3.2)	2 (2.7)/8 (10.1)/65 (86.7)/0 (0.0)	<**0.0001**
Status of alcohol consumption (E/O/N), n (%)	47 (20.2)/154 (66.1)/32 (13.7)	12 (12.8)/16 (17.0)/66 (70.2)	1 (1.3)/15 (20.0)/59 (78.7)	<**0.0001**
Current smoking status (smoker/non smoker), n (%)	68 (29.2)/165 (70.8)	13 (13.8)/81 (86.2)	16 (21.3)/59 (78.7)	**0.0156**
Brinkman index (mean (SD))	105.9 (166.6)	80.8 (212.0)	138.9 (236.5)	0.151
Analgesic as everyday use, n (%)	0 (0.0)	8 (8.5)	0 (0.0)	<**0.0001**
Major depressive disorder				
HAMD (17 items/21 items, mean (SD)), n (%)		8.7 (7.1)/9.6 (7.6)		
Antidepressant (SSRI/SNRI/MIR/TRA/TCA/none), n (%)		46 (48.9)/16 (17.0)/16 (17.0)/6 (6.4)/10 (10.6)		
Antipsychotic (ARI/OLA/SUL/none), n (%)		3 (3.2)/2 (2.1)/2 (2.1)/87 (92.6)		
Mood stabilizer (Li/none), n (%)		4 (4.3)/90 (95.7)		
Schizophrenia				
PANSS (total/positive/negative/general, mean (SD))			80.1 (21.0)/19.9 (7.0)/21.4 (6.4)/42.5 (9.7)	
Antipsychotic (Mono/poly), n (%)			35 (40)/40 (60)	
Antipsychotic monotherapy (ARI/BLO/CLO/OLA/PAL/QUE/RIS), n (%)			3 (8.6)/8 (22.9)/1 (2.9)/2 (5.7)/7 (20.0)/1 (2.9)/13 (37.1)	
Antipsychotic polypharmacy (SGA + SGA/SGA + FGA), n (%)			35 (87.5)/5 (12.5)	
Mood stabilizer (Li/VAL/none)			5 (6.7)/7 (9.3)/63 (84)	
Antidepressant (SSRI/MIR/TRA/none)			5 (6.7)/3 (4.0)/5 (6.7)/62 (82.7)	

Employment: F = full time workers, P = part time workers, N = no workers, S = suspension of work.
Alcohol: E = everyday, O = occasionally, N = no.
Smoking status: C = current smoker, P = past smoker, N = no smokers.
ARI: aripiprazole, BLO: blonanserin, CLO: clozapine, FGA: first generation antipsychotic, HAMD: Hamilton Depression Rating Scale, Li: lithium, MIR: mirtazapine, OLA: olanzapine, PAL: paliperidone, PANSS: Positive and Negative Syndrome Scale, QUE: quetiapine, RIS: risperidone, SD: standard deviation, SGA: second generation antipsychotic, SNRI: serotonin and noradrenaline reuptake inhibitor, SSRI: selective serotonin reuptake inhibitor, SUL: sulpiride, TCA: tricyclic antidepressant, TRA: trazodone, VAL: valproate.