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Oversight of constipation in inpatients with schizophrenia: a cross-sectional study☆,☆☆,★,★★

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ABSTRACT

Objective: Constipation is often overlooked in patients with schizophrenia. We examined their awareness of constipation and whether they reported it to their psychiatrists.
Method: Five hundred three inpatients with schizophrenia (*International Classification of Diseases, 10th Revision*) were interviewed about their recent bowel movements and evaluated for the diagnostic criteria for functional constipation. If constipation was present, patients were asked if they were aware of it and had reported it to their psychiatrists in charge. Additionally, their global psychopathology and functioning were assessed using the Clinical Global Impression-Schizophrenia (CGI-SCH) and the Global Assessment of Functioning (GAF), respectively.
Results: The criteria for constipation were met by 184 patients (36.6%); of these patients, only 56.0% (103/184) were aware of it. Moreover, only 34 of the constipated patients (18.5%) reported its presence to their psychiatrists. No significant differences were found in the CGI-SCH overall severity or subscale scores or in the GAF scores between those patients who reported and those who failed to report constipation.
Conclusions: The present study demonstrated that constipation was neither recognized nor reported to psychiatrists by a significant percentage of the patients. These findings underscore the importance of greater vigilance and active evaluation of constipation in patients with schizophrenia for appropriate clinical management.

1. Introduction

Constipation is frequently observed in patients with schizophrenia with prevalence rates of up to 50% [1–3]. Despite its high prevalence, constipation has not gathered wide attention when compared to other physical disturbances such as metabolic comorbidities and parkinsonian symptoms. However, constipation can lead to a serious condition; it can result in paralytic ileus and even death [2,4]. In fact, Palmer et al. conducted a systematic literature search and identified 102 cases of suspected life-threatening clozapine-induced gastrointestinal hypomotility; of these, 28 patients (27.5%) died [4]. Although this high mortality rate may represent a reporting artifact as physicians are more likely to disclose deaths than nonfatal outcomes, this may also derive from a delay in diagnosis [4], preventing timely clinical management. Moreover, persistent constipation was reported to be associated with poor quality of life according to one recent cross-sectional study of 5107 community dwelling women (N=5107) [5].

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There are at least two possibilities why diagnosis of constipation is delayed. First, patients may not fully realize that they suffer from constipation in part because of the intrinsic psychopathology of the illness, including impairments in self-care. This phenomenon may also be attributable to a potentially increased threshold for pain [6]. Second, patients may not report this condition to their physicians since they are not taking it seriously even when they are aware of it. To our knowledge, there have been no systematic data on these important issues. Moreover, if those patients whose constipation is likely to be overlooked are clinically characterized, it would be of pertinence since we can pay more appropriate attention to this potentially serious condition.

In the present study, we conducted a large-scale multisite survey to evaluate subjective recognition of constipation in inpatients with schizophrenia and elucidate clinical and demographic characteristics associated with the oversight of such a condition.

2. Method

2.1. Subjects

This cross-sectional study was conducted in inpatient units of the following six psychiatric hospitals in the suburbs of Tokyo, Japan, from July to September 2012: Ohizumi Hospital, Toyoko-Keiai Hospital, Minami-Hanno Hospital, Inokashira Hospital, Tsurugaoka Garden Hospital and Kinosaki Hospital. The study was approved by the institutional review board at each participating site, and subjects provided written informed consent after receiving detailed information about the protocol.

All inpatients who were 18 years old or older and diagnosed with schizophrenia, schizophreniform disorder, delusional disorder or psychotic disorder not otherwise specified, according to the *International Classification of Diseases, 10th Revision* [7], and whose physicians-of-record agreed to perform clinical assessments of psychopathology were approached by one of the authors (T.K.). We excluded patients who were incapable of providing consent.

Patients who agreed to participate in this study were asked if they were experiencing constipation according to the diagnostic criteria for functional constipation (the Rome III criteria) (Table 1) [8]. The Rome III criteria were adopted since they are the most widely used criteria for functional constipation. If constipation was present, patients were asked if they were aware of it; when they were aware of it, they were further asked if they had spontaneously reported it to their psychiatrists in charge and how distressful it was on a 7-point Likert scale (1: *not at all*, 4: *moderately distressful*, 7: *extremely distressful)*.

The following information was collected: age, sex, ethnicity, height, weight, duration of illness, number and total duration of hospitalizations, comorbidity, history of abdominal surgery, current medications and use of laxatives for the previous 1 week. Daily doses of antipsychotics were converted to chlorpromazine equivalents (CPZE) [9]. Psychiatrists in charge of the patients assessed their global psychopathology and functioning using the Clinical Global Impression-Schizophrenia (CGI-SCH) [10] and the Global Assessment of Functioning (GAF) [11], respectively. Case notes by the nursing staff that recorded the frequency of bowel movements for all individual patients were reviewed to confirm if reports by the subjects were accurate. When any discrepancy between them was found, the frequency recorded by the nursing staff was adopted.

Table 1
Diagnostic criteria for functional constipation[a] by Longstreth et al. (2006) [8]

1. Must include 2 or more of the following:
   a. Straining during at least 25% of defecations
   b. Lumpy or hard stools in at least 25% of defecations
   c. Sensation of incomplete evacuation for at least 25% of defecations
   d. Sensation of anorectal obstruction/blockage for at least 25% of defecations
   e. Manual maneuvers to facilitate at least 25% of defecations (e.g., digital evacuation, support of the pelvic floor)
   f. Fewer than 3 defecations per week
2. Loose stools are rarely present without the use of laxatives
3. There are insufficient criteria for irritable bowel syndrome

[a] Criteria fulfilled for the last 3 months with symptom onset at least 6 months prior to diagnosis.

2.2. Statistical analyses

Statistical analyses were carried out with the Statistical Package for Social Science version 20.0 for Windows. To characterize patients, clinical and demographic variables were compared between those who were aware of constipation versus those who were not as well as those with constipation who reported it versus those who did not using an independent *t* test. The rates of constipation were compared between patients who were receiving two or more antipsychotics and those who were not and between patients who were receiving anticholinergic antiparkinsonian drugs and those who were not by a χ^2 test. A *P* value of $<.05$ was considered statistically significant, and all tests were two tailed.

3. Results

3.1. Study sample

A total of 558 patients were approached; of these, 503 patients (90.1%) agreed to participate in this study. Demographic and clinical characteristics are summarized in Table 2. Their mean age was in their late 50s, and duration of illness was more than 30 years; this indicates that a majority of patients suffered from chronic schizophrenia. Psychiatric diagnoses of subjects were as follows: schizophrenia ($n=497$, 98.8%), schizoaffective disorder ($n=4$, 0.8%) and delusional disorder ($n=3$, 0.6%). These patients were all Asians and treated by a total of 58 psychiatrists. Mean±S.D. CPZE dose of daily antipsychotic drugs was 684±544 mg. The most frequently used antipsychotic drug was risperidone (37.5%), followed by olanzapine (27.8%), levomepromazine (22.7%) and haloperidol (13.0%). Antipsychotic polypharmacy was utilized in 273 patients (54.3%), and 236 patients (46.9%) were receiving anticholinergic antiparkinsonian drugs. Three hundred forty-two patients (68.0%) were receiving laxatives. History of abdominal surgery was present in 39 patients (7.8%).

3.3. Prevalence and awareness of constipation

One hundred eighty-four subjects (36.6%) fulfilled the diagnostic criteria for functional constipation. The mean±S.D. score on a 7-point Likert scale regarding the subjective severity of constipation was 3.5±1.8, indicating "being mildly to moderately annoyed." Of these

Table 2
Demographic and clinical characteristics of subjects

Characteristics	Values ($N=503$)
Age (mean±S.D.), years	58.13±12.95
Sex: men, *N* (%)	257 (51.1)
Duration of illness (mean±S.D.), years	31.11 ±14.83
Total number of lifetime hospitalizations (mean±S.D.)	5.4±4.5
Total duration of lifetime hospitalization (mean±S.D.), years	13.4±18.9
Height (mean±S.D.), cm	160.7±9.0
Body weight (mean±S.D.), kg	58.5±13.8
GAF (mean±S.D.)	32.5±13.0
CGI-SCH (mean±S.D.)	
Positive symptoms	4.3±1.2
Negative symptoms	4.4±1.1
Depressive symptoms	2.9±1.2
Cognitive symptoms	3.9±1.2
Overall severity	4.3±1.0