Unmet needs of patients with major depressive disorder – Findings from the ‘Effectiveness of Guidelines for Dissemination and Education in Psychiatric Treatment (EGUIDE)’ project: A nationwide dissemination, education, and evaluation study

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According to past analyses of prescription and treatment patterns for major depressive disorder (MDD), the majority of MDD patients in Japan have not been treated according to the recommended guidelines. In this context, the Japanese Society of Mood Disorders published the ‘Treatment Guidelines for Major Depressive Disorders’ (GL) in 2012, and the ‘Effectiveness of Guidelines for Dissemination and Education in Psychiatric Treatment (EGUIDE)’ project was launched in 2016, which aimed to standardize medical practice using quality indicators (QI) as indices for the quality of medical practice. The present study was a cross-sectional, retrospective study conducted in a total of 84 institutions (36 university hospitals, 23 national/ public hospitals, and 25 private hospitals). According to the recommendations of the GL, a total of eight QI (Table S1) were evaluated based on the survey of the treatments and prescriptions at discharge for patients with MDD during the first year (2016–2018) in the participating hospitals. The data were collected by the EGUIDE project members. In this survey, we recorded all types and dosages of psychotropic drugs, including antidepressants, antipsychotics, mood stabilizers, and benzodiazepines. The use of modified electroconvulsive therapy (mECT) and cognitive behavioral therapy were also recorded. The ethics committees of the National Center of Neurology and Psychiatry and each participating university/hospital/clinic approved the entire study protocol. Written informed consent was obtained from all participants (psychiatrists who treated the inpatients). The treated inpatients could see the purpose and procedures of the study on websites and could refuse to participate freely (opt-out).

This survey involved a sample of 1283 patients who had been diagnosed with MDD at discharge (Table S2). Values of each QI in all subjects and in each hospital are presented in Table S3. In this study, only 60.2% of patients received antidepressant monotherapy, with a large institutional difference from less than 20% to 100% (Fig. 1). A previous report already confirmed that antidepressant polypharmacy prevailed in Japan, while this is the first report showing a large institutional difference. The proportion of patients who received no prescription of anxiolytics or hypnotics was only 25.1%, which is consistent with the study showing long-term benzodiazepine use despite the recent clinical guidelines in Japan. Although combination therapy with antidepressants and benzodiazepines may be more effective than therapy with antidepressants alone in the early phase, these effects may not be maintained in the acute or continuous phase. Thus, long-term benzodiazepine use is not recommended in the GL due to the potential side-effects. The QI values for each hospital type are presented in Table S4. QI-1 was significantly higher in university hospitals than in national/public hospitals, while QI-3, QI-4, QI-5, and QI-6 were significantly higher in university hospitals than in private hospitals. Possible explanations for institutional differences include different instructions from senior psychiatrists regarding prescribing and treatment. Many psychiatry residents included in this study were affiliated with university hospitals and they generally follow the GL rather than prescribing traditions introduced by senior psychiatrists. As regional differences in treatment patterns have been previously reported, comparisons of QI values between eastern and western Japan are shown in Table S5. There was a significantly higher proportion of patients receiving mECT in eastern Japan (17.6%) compared to that in western Japan (8.4%). Although a compositional difference in hospital type between eastern and western Japan (university: 46.9% vs 37.1%; national/public: 34.7% vs 17.1%; private: 18.4% vs 45.7%; χ²-test P = 0.019) may affect the difference, the difference in the proportion of patients undergoing mECT may stem from different attitudes towards mECT in these regions. The low proportion of patients undergoing mECT treatment in private hospitals (3%) may be because most private hospitals...
do not have the facilities for mECT. The low proportion of patients undergoing cognitive behavioral therapy in all hospitals (1%) may reflect the low level of provision of cognitive behavioral therapy despite its coverage by Japanese health insurance.1

This study has several limitations. First, we did not assess depressive symptoms using rating scales. Second, this study may have a selection bias because these 84 hospitals may not reflect the treatment and prescription patterns of all hospitals in Japan. The ratio of antidepressant monotherapy may be affected by not only hospital type but also the patient’s background, such as refractory episodes, and the difference in positioning and role of the hospital in the community.

In accordance with the GL, we should strive to reduce antidepressant polypharmacy and long-term use of benzodiazepines in the treatment of MDD in Japan. Based on this baseline survey, we plan to report changes brought by the GL education program. In the future, proper diagnosis and treatment following dissemination of and adherence to the GL will provide suitable circumstances for high-quality research of MDD.8–10

Disclosure statement
The authors declare that they have no conflicts of interest related to this article.

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Supporting information
Additional Supporting Information may be found in the online version of this article at the publisher’s web-site:

Table S1 The eight quality indicators (QI) used in the present study.

Table S2 Demographic data of patients with major depressive disorder (MDD).

Table S3 Quality indicator (QI) values for patients with major depressive disorder (MDD) in the first year of participation. The QI of each patient (n = 1283) is presented. The QI for each hospital (n = 84) was also calculated and is presented as the mean ± SD and the median with interquartile range (IQR).

Table S4 Quality indicator (QI) values for each hospital type in the first year of participation. The QI of five subgroups of the 84 hospitals divided by hospital type (university hospital, national/public hospitals, and private hospitals) are presented as the means ± SD. QI values in each group were compared with the Kruskal–Wallis test followed by the post-hoc test (Dunn test). The significance level was set at two-tailed P < 6.25 × 10−3 because the Bonferroni method was applied. The significance level of the post-hoc test was set at P < 1.7 × 10−2. Significant P-values are boldfaced and underlined.

Table S5 Quality indicator (QI) values of eastern Japan and western Japan in the first year of participation. The QI of five subgroups of the 84 hospitals divided by region (eastern Japan, western Japan) are presented as the means ± SD. QI values in each group were compared with the Mann–Whitney U-test. The significance level was set at two-tailed P < 6.25 × 10−3 as the Bonferroni method was applied. Significant P-values are boldfaced and underlined. There was a significant compositional difference in hospital type between eastern and western Japan (university: 46.9% vs 37.1%; national/public: 34.7% vs 17.1%; private: 18.4% vs 45.7%; χ²-test P = 0.019.

Hitoshi Iida, MD, PhD,1 Junichi Iga, MD, PhD,2 Naomi Hasegawa, PhD,3 Yuka Yasuda, MD, PhD,3 Tomoya Yamamoto, MD, PhD,3 Kenichiro Miura, MD, PhD,3 Junya Matsumoto, MD, PhD,4 Atsunobu Murata,3 Kazuyoshi Ogasawara, MD, PhD,5 Hisashi Yamada, MD, PhD,5 Hikaru Hori, MD, PhD,5 Kayo Ichishashi, MD, PhD,4 Naoki Hashimoto, MD, PhD,10 Kazutaka Ohi, MD, PhD,10 Norio Yasui-Furukori, MD, PhD,10 Takashi Tsuboi, MD, PhD,5,9 Toshinori Nakamura, MD,4 Masahide Usami, MD, PhD,10 Ryuji Furihata, MD, PhD,6 Yoshikazu Takaesu, MD, PhD,3,11 Kunihiro Iwamoto, MD, PhD,17 Nobuhiro Sugiyama, MD, PhD,10 Taishiro Kishimoto, MD, PhD,19 Naohisa Tsujino, MD, PhD,20 Hiroki Yamada, MD, PhD,21 Akiyota Hishimoto, MD, PhD,22 Kiyotaka Nemoto, MD, PhD,23 Kiyokaze Atoke, MD, PhD,8 Hiroyuki Muraoka, MD, PhD,24 Eiichiro Katsumoto, MD, PhD,25 Satoru Oishi, MD, PhD,26 Takahiko Inagaki, MD, PhD,26 Fumitaki Ito, MD, PhD,32 Yayoii Imamura, MD, PhD,33 Mikio Kido, MD, PhD,29 Tatsuya Nagasawa, MD, PhD,30 Shusuke Numata, MD, PhD,30 Shinichiro Ochi, MD, PhD,2,25 Masaaki Iwata, MD, PhD,26 Hidenaga Yamamori, MD, PhD,2,25 Junichi Fujita, MD, PhD,22 Toshiaki Oizutsuka, MD, PhD,33 Satoshi Yamamura, MD, PhD,24 Manabu Makinodan, MD, PhD,28,34 Michiko Fujimoto, MD, PhD,26 Yoihiro Takayanagi, MD, PhD,21,25 Kenji Takezawa, MD, PhD,18 Hiroshi Komatsu, MD, PhD,28,34 Kentaro Fukumoto, MD, PhD,34 Shinichiro Tamai, MD,40 Hirota Yamagata, MD, PhD,41 Chika Kubota, MD, PhD,13 Tadasu Horai, MD, PhD,13 Ken Inada, MD, PhD,13,41 Koichiro Watanabe, MD, PhD,13 Hiroaki Kawasaki, MD, PhD,3 and Ryota Hashimoto, MD, PhD,3

1 Department of Psychiatry, Faculty of Medicine, Fukuoka University, Fukuoka. 2 Department of Neuropsychiatry, Molecules and Function, Ehime University Graduate School of Medicine, Ehime. 3 Department of Pathology of Mental Diseases, National Institute of Mental Health, National Center of Neurology and Psychiatry, Tokyo. 4 Medical Corporation Foster. 5 Department of Pharmacy, Osaka University Hospital, Osaka. 6 Center for Postgraduate Clinical Training and Career
Hospital-wide evaluation of delirium incidence in adults under 65 years of age
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Delirium is generally perceived as an acute neuropsychiatric condition in the elderly. The incidence in adults under 65 years of age has been largely neglected, although pooled epidemiological data indicate a notable incidence. However, this has not yet been systematically evaluated in a large cohort. Here we show that delirium occurred in about one out of 10 adults under 65 years of age in a comprehensive sample of 18 599 patients across 35 services. Though important advances have been made in delirium prevention and treatment in the elderly, the application of those findings in adults under 65 years of age is not straightforward. The investigation of delirium incidence in younger adults is fundamental to estimate its relevance.

All data in this prospective cohort study were collected at the University Hospital Zurich, Switzerland, a tertiary care center, in 2014, based on a quality-improvement initiative aiming to improve the detection and management of delirium for all hospitalized patients, the ‘Delir-Path’. This study was approved by the ethics committee of the Canton of Zurich (KEK-ZH-Nr. 2012-0263). A waiver of informed consent was obtained from the committee. Incidence was determined by simple logistic regressions with their respective odds ratios (OR). Please refer to Appendix S1 for more details on the inclusion criteria and the statistical analysis, and to Figure S1 for the flowchart of sample recruitment.

Upon suspicion, trained nursing staff performed the Delirium Observation Screening (DOS) Scale, which reflects DSM-IV criteria. In patients with a DOS score ≥3, presence of delirium was considered, and evaluation by a physician according to the DSM-5 criteria was requested. The contents of nurses’ training are described in the supplements. The cut-off score of ≥3 was chosen due to the decent sensitivity and specificity, and its high negative predictive value of almost 100% as previously demonstrated. Once delirium was documented, it was followed up with DOS three times daily until indication of remission. In the intensive care units (ICU), the Intensive Care Delirium Screening Checklist (ICDSC) was routinely performed three times per day. In patients with an ICDSC score ≥4, presence of delirium was considered, and evaluation by a physician was requested.

The overall incidence of delirium in our cohort of adults under 65 years of age was 14.5%. Delirious patients were on average older than non-delirious patients (mean 49 vs 42 years; P < 0.001) and were hospitalized considerably longer (mean 17 vs 7 days; P < 0.001). Patients developing delirium were often urgent admissions (59% vs 46%; P < 0.001) and were hospitalized much higher in patients who had delirium (23% vs 5%; P < 0.001, OR 4.21–5.95). Across different ICU, the incidence ranged from 64.9% to 84.5% (P < 0.001, OR 10.85–32.38; Fig. 1). In medical services, incidence was highest in palliative care (54.0%, OR...