Real-world evidence analysis of oral and long-acting injectable antipsychotic treatment patterns among patients with schizophrenia in Germany [Abstract]

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Introduction: Mood and psychotic disorders, such as major depressive disorder (MDD), bipolar disorder (BD), and schizophrenia (SCZ), show overlapping symptom dimensions, including anhedonia, cognitive dysfunction, social impairment, anxiety, and sleep disturbances. These symptom dimensions are linked to psychopathology severity and can be studied to personalise treatments [1-2]. Polygenic scores (PGSs), which quantify an individual's genetic predisposition to complex traits, may serve as cross-diagnostic markers of treatment response [3]. In this study, we aimed to investigate whether PGSs indexing transdiagnostic symptom dimensions are associated with treatment resistance, remission, or functional improvement across patients with MDD, BD, and SCZ.
Methods: We analysed data from four clinical cohorts: STAR*D and GSRD (both including patients with MDD), STEP-BD (including patients with BD), and CATIE (including patients with SCZ). PGSs for anhedonia, cognitive traits, sociability, resilience, anxiety, and sleep-related traits were computed using the SBayesRC method, an approach that takes into account the functional impact of genetic variants [4]. Outcomes of interest included: (a) symptomatic remission; (b) treatment resistance, defined as failure to respond to at least two adequate treatment trials (or clozapine use in SCZ); and (c) percentage change in functioning, assessed using the Quality-of-Life Scale (QOLS) in CATIE, the Life-Range of Impaired Functioning Tool (LRIFT) in STEP-BD, and the Work and Social Adjustment Scale (WSAS) and Work Productivity and Activity Impairment scale (WPAI) in STAR*D. Logistic and linear regression models were applied within each cohort, adjusting for age, sex, baseline severity, genotyping batch effects, and population stratification principal components. Results were meta-analysed across cohorts using random-effects models with Paule-Mandel estimation. Leave-one-out sensitivity analyses were conducted to evaluate the stability of findings. Bonferroni correction was applied considering an α=0.0015 (based on 33 tests).
Results: After quality control, a total of 3351, 2872, and 1821 patients were included in the PGS analyses for remission, treatment resistance, and percentage improvement in functioning, respectively. Among those included in the remission analysis, 2348 patients (70%) did not achieve remission. For the treatment resistance analysis, 1303 patients (45%) were classified as treatment-resistant. No association remained significant after Bonferroni correction in the main meta-analyses. A nominally significant association was observed between the PGS for Trail Making Test Part B, indexing worse executive function, and non-remission (odds ratio [OR]=1.13, p=0.012, I^2 = 13%). This association reached Bonferroni significance in leave-one-out analysis excluding the SCZ cohort (OR=1.17, p=0.001, I^2=0%). The PGS for verbal-numerical reasoning, reflecting better fluid intelligence, was nominally associated with improved functioning across diagnoses (β=–0.06, p=0.016, I^2 = 0%), with further support when excluding the BD cohort (β=–0.07, p=0.0095, I^2 = 0%).
Conclusions: PGSs indexing cognitive traits such as executive function may influence treatment outcomes in mood disorders but not in SCZ. Cross-diagnostic heterogeneity in symptom presentation across mood and psychotic disorders may limit the detection of genetic associations detectable at a dimensional level. Although cross-disorder PGS analyses represent a promising tool for advancing precision psychiatry, future studies should focus on symptom dimensions with more homogeneous presentation across diagnoses and should integrate genetic risk profiles with environmental and clinical data to improve predictive modelling.

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Conflict of interest

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REAL-WORLD EVIDENCE ANALYSIS OF ORAL AND LONG-ACTING INJECTABLE ANTIPSYCHOTIC TREATMENT PATTERNS AMONG PATIENTS WITH SCHIZOPHRENIA IN GERMANY

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Background: The pharmacological treatment landscape of schizophrenia in Germany is diverse, and comprehensive information about treatment patterns is limited. This study provides an overview of the demographics of patients with schizophrenia in Germany, alongside exploring treatment patterns of both oral antipsychotics (OAs) and long-acting injectable antipsychotics (LAIs), including discontinuation and adherence rates.
Methods: This cross-sectional, retrospective claims database study examined a prevalent schizophrenia population using the German InGef research database from January 2020 to December 2022. Adult patients with ≥1 inpatient and/or ≥2 outpatient ICD-10-GM schizophrenia diagnoses during the enrolment period (January–December 2021) and treatment with ≥1 antipsychotic in the 1-year post-index period were included. Daily estimated OA intake was calculated using the WHO Daily Defined Dose. The number of LAI injections was estimated using representative injection intervals as recommended in the package leaflets and clinical practice guidelines. Treatment discontinuation was defined as a gap of 60 days after the days of supply of the previous prescription of the initial agent without a refill. Adherence was calculated using the proportion of days covered, with high adherence defined as a score of ≥0.8.
Results: A total of 11,291 patients with schizophrenia were included. Among those meeting the inclusion criteria, 53.8% were male, and the average age was 52.1 (± 16.9) years. As a first observable prescription during the post-index period, 68.9% were prescribed 1 OA, 10.7% received 1 LAI and among those with combination therapy on the same day, 18.5% had ≥2 OAs, 0.05% had ≥2 LAIs and 1.87% had ≥1 OA and LAI.
The final cohort comprised 8238 patients who received 1 antipsychotic drug, defined as the index agent, that was also prescribed to ≥100 patients. Olanzapine, risperidone, quetiapine and aripiprazole were the most commonly

prescribed OAs (17.7%, 16.8%, 15.2% and 11.6%, respectively), while paliperidone, aripiprazole, flupentixol and risperidone were the most commonly prescribed LAIs (5.7%, 2.3%, 2.1% and 1.8%, respectively).
Patients prescribed LAIs showed lower treatment discontinuation rates compared to those prescribed OAs (18–27% vs 26–75%). Patients prescribed LAIs remained on treatment for longer on average until discontinuation than patients receiving OAs (144–191 days vs 106–163 days). Among OAs, olanzapine (n=1457) and ziprasidone (n=100) had the lowest proportion of discontinuations (36% and 26%, respectively), with patients treated with olanzapine, ziprasidone and aripiprazole remaining on treatment the longest (163, 162 and 155 days, respectively). The proportions of treatment switches to different molecules for patients on OAs and LAIs were relatively comparable (5–32% and 6–14%, respectively). Overall, a greater proportion of patients prescribed LAIs demonstrated high adherence, compared to OAs (39–52% vs 0–46%). Among OAs, more patients prescribed ziprasidone and olanzapine demonstrated high adherence (46% and 33%, respectively) compared to other OAs.
Conclusions: In this dataset from Germany, LAIs are less commonly prescribed than OAs, despite demonstrating better adherence and discontinuation outcomes. These findings are consistent with previous literature [1]. However, within OAs, some molecules exhibit more favourable outcomes than others.
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Conflict of interest
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This study was sponsored by Teva Branded Pharmaceutical Products R&D LLC. S.Leucht has nothing to declare. AEGM, AV, and WL are employees of Teva. DZ, KRF, and S.Lim are employees and stockholders of Teva. JSH is an employee of PharmaLex GmbH (former Xcenda GmbH), which received consulting fees for the execution of the study from Teva. AH has received advisory fees from Boehringer Ingelheim, Recordati, Rovi, and Teva received honoraria for speakership from AbbVie, Advanz, Janssen, Lundbeck, Recordati, and Rovi and was an editor for German schizophrenia guidelines.

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CATATONIA, ACUTE KIDNEY INJURY AND DEPRESSION: AN UNDERRECOGNIZED CLINICAL CHALLENGE

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Background: Catatonia is a complex neuropsychiatric syndrome characterized by a spectrum of motor, behavioral, and autonomic abnormalities. While it can occur in various psychiatric and medical conditions, catatonia is commonly associated with mood disorders, particularly major depressive episodes. Despite being well-recognized for its neurobehavioral manifestations, the systemic complications of catatonia, especially acute kidney injury, are frequently overlooked in clinical settings. Acute kidney injury in the context of catatonia is a clinically significant but underreported consequence, likely resulting from a combination of prolonged immobility, poor oral intake, and dehydration. These factors may be further exacerbated by autonomic instability and an inability to communicate basic needs. Increased awareness of this association is critical, as early identification and intervention can prevent serious outcomes. This review aims to synthesize current evidence on the occurrence of acute kidney injury in patients with catatonia associated with major depressive episodes.
Methods: A comprehensive literature search was conducted across PubMed, Scopus, and Web of Science databases to identify relevant case reports, case series, and observational studies published up to March 2025. Studies were included if they were written in English and described cases of acute kidney injury occurring in the context of catatonia during a depressive episode. Extracted data included patient demographics, psychiatric diagnoses, catatonic features, renal function markers (serum creatinine, blood urea nitrogen), therapeutic interventions, and clinical outcomes. Due to variability in study designs and reporting, a descriptive synthesis and qualitative analysis were performed to summarize findings
Results: A total of 18 studies (9 case reports, 6 case series, and 3 observational studies) involving 47 patients met inclusion criteria. The majority of cases involved identifiable precipitating factors for acute kidney injury, with prolonged immobility, dehydration, and inadequate nutritional intake being most common. Reported serum creatinine values at presentation ranged from 1.8 to 7.5 mg/dL, indicating varying degrees of renal impairment. Management of catatonia in these patients primarily involved benzodiazepines, which were administered in approximately 72% of cases. Renal support, including fluid resuscitation and, in more severe instances, renal replacement therapy, was required in over one-third of cases. Importantly, renal function improved in 89% of patients, and 81% experienced full resolution of catatonic symptoms with appropriate treatment. No deaths were directly attributed to renal complications, underscoring the reversibility of AKI when promptly managed.
Conclusion: Though infrequently reported, acute kidney injury is a potentially severe but preventable complication of catatonia in the setting of major depressive episodes. Clinicians should maintain a high index of suspicion for renal impairment in catatonic patients, particularly when signs of immobility, poor hydration, or autonomic instability are present. Early psychiatric intervention and supportive medical care including hydration and monitoring of renal function, are essential to improving outcomes. Greater clinical awareness and future research are needed to establish standardized protocols for the medical monitoring of patients with affective catatonia to mitigate systemic complications.
No conflict of interest

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DEVELOPMENT OF A NATURAL LANGUAGE PROCESSING MODEL TO IDENTIFY PATIENTS WITH COGNITIVE IMPAIRMENT ASSOCIATED WITH SCHIZOPHRENIA FROM A REAL-WORLD DATASET

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Introduction: Cognitive impairment (CI) is common in people with schizophrenia and is associated with greater disease severity and functional impairment. Natural language processing (NLP) models may be used to identify CI associated with schizophrenia (CIAS) documented in electronic health record (EHR) datasets.
Aims: Identify and validate the presence of CIAS in EHR data using NLP models applied to free-text clinical notes.
Methods: A named entity recognition model was developed. Sentences containing features that describe CI were identified. These sentences were then screened using keywords associated with the 5 cognitive domains (attention, memory, social cognition, executive functioning and generic cognition) from Mascio and colleagues [1] which were defined based on guidance provided by clinical advisors. Extractions describing a deficit were retained and those that were irrelevant/had a positive valence (i.e. indicating unimpaired cognitive function) were removed.
A contextual classification model affirmed mentions of CI and accounted for negation and temporality. Related key words were analysed based on syntax and semantics to determine symptom context. The performance of models for each of the 5 domains was estimated against a manually annotated reference dataset.
To assess validity of the derived NLP models, data were extracted from the Akrivia Health secondary mental healthcare dataset from across England and Wales [2] for patients ≥18 years at diagnosis, with a first schizophrenia diagnosis and clinical notes within the study period (1 January 2005–31 December 2023). Patients diagnosed with dementia, mild CI, or intellectual disability were excluded. Identified patients were assessed for CI using the derived NLP models which were further validated via analysis of Health of the Nation Outcome Scale (HoNOS) scores, a clinician-recorded outcome measure including an assessment of cognitive functioning.
Results: A sample of 500 sentences was analysed to validate the overall named entity recognition model with a precision of 0.83 and recall of 0.86. For each of the 5 cognitive domains, 180 sentences were annotated, with the contextual