Clozapine Use and Forensic Outcomes in Psychiatric Inpatients Deemed Incompetent to Stand Trial

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Referrals for competency restoration increased in the past decade, with the majority of incompetent to stand trial (IST) patients having schizophrenia; 25 percent of schizophrenia patients are treatment resistant. Clozapine is superior to other antipsychotics for treatment resistance but remains underutilized, particularly in forensic settings. Despite the impact of treatment resistance on the legal system, the literature on clozapine for IST patients is limited to two papers comprising 26 patients. A retrospective chart review was conducted of all IST admissions to a California hospital for 2014 to 2018, examining clinical and forensic outcomes in those newly started on clozapine and discharged. There were 191 new clozapine starts among IST patients, 92.7 percent of whom were diagnosed with schizophrenia or another psychosis. Over 90 percent were discharged on clozapine, and 36.1 percent were discharged on clozapine as trial competent; moreover, this cohort also had the shortest length of stay. This analysis indicates that most IST patients needing clozapine can be successfully treated, with a substantial proportion restored to trial competency. These data and earlier studies reinforce the concept that forensic programs have a medical duty to offer IST patients with severe mental illness a clozapine trial when indications exist for its use.

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The Supreme Court's 1960 decision in *Dusky v. United States* established the basic standard for competency to stand trial.[1,2] Their concise formulation of the competency criteria required that the defendant "has sufficient present ability to consult with his lawyer with a reasonable degree of rational understanding —and whether he has a rational as well as factual understanding of the proceedings against him" (Ref. 1, p 402). As generally implemented, the *Dusky* standard thus consists of three prongs: a rational ability to consult with one's attorney, a factual understanding of the proceedings, and a rational understanding of the proceedings.[2] Individuals deemed incompetent to stand trial (IST) whose underlying condition presents a substantial likelihood of treatment response (e.g., schizophrenia) are then referred for treatment, with competency restoration services occurring in a variety of settings, including the community, local jail, or forensic psychiatric inpatient unit.

Across the country, state hospital systems are facing pressure from the increasing referrals for competency restoration services.[3] Between 1999 and 2014, a sampling of 27 states found a 72 percent increase in the number of individuals receiving competency restoration services in a state hospital setting.[3] When examining the clinical characteristics of IST patients, several studies note a disproportionate number with long-standing psychiatric diagnoses, predominantly psychosis.[4–6] Schizophrenia spectrum diagnoses comprise the majority of IST patients with chronic psychosis, and a 2020 retrospective analysis of all IST patients admitted to the California Department of

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State Hospitals (Cal-DSH) from January 1, 2010 through June 30, 2018 ($n = 20{,}041$) found three variables predicted longer length of stay: number of physically violent acts, older age at admission, and having a diagnosis of schizophrenia or neurocognitive disorder (e.g., dementia, intellectual disability).[7] This finding is consistent with logistic regression models that predict lower likelihood of competency restoration for patients with schizophrenia.[8]

Schizophrenia is a chronic psychotic disorder that consists of multiple domains, including positive symptoms, negative symptoms, cognitive deficits, mood symptoms, and aggression, all of which are present in varying degrees for each individual.[9–11] Even when positive psychosis symptoms (e.g., hallucinations, delusions, thought disorganization) are controlled, cognitive dysfunction remains a barrier to functional recovery.[12] While function is defined broadly in the schizophrenia literature in terms of life skills,[13] in the context of IST treatment the functional outcome of interest involves acquisition of knowledge sufficient to satisfy the prongs of competency. As of 2021 there is no effective medication for schizophrenia related cognitive dysfunction, and evidenced-based cognitive remediation is not widely available in forensic settings, nor has it been specifically studied for restoration of IST patients.[14–16] While cognitive dysfunction remains a barrier to competency restoration for certain schizophrenia spectrum patients, this can only be addressed after achieving substantial improvement in positive symptoms. Approximately 25 percent of schizophrenia patients have treatment resistant positive psychotic symptoms, usually defined by the failure of at least two antipsychotics.[17] For these patients, trials of additional antipsychotics are typically futile with response rates less than 5 percent; however, there is one particularly effective medication, clozapine, with response rates of 40 to 60 percent for treatment-resistant schizophrenia (TRS).[18,19]

Clozapine has been approved in the United States since 1989 but comes with mandatory hematologic monitoring and a unique array of adverse effects that require a degree of expertise by the treating clinician.[19,20] Clozapine was initially studied for TRS but has been found to possess other evidence-based uses, including in addressing suicidality in schizophrenia patients, psychogenic polydipsia, persistent impulsive aggression, and treatment resistant mania.[19] Despite the absence of medication alternatives for TRS, the literature notes limited availability and use of clozapine for incarcerated treatment-resistant patients.[21,22] Because of the large volume of treatment resistant patients within state hospital systems, these facilities tend to have significant experience with clozapine and are often large repositories for more difficult to treat IST patients who cannot be restored to competency by local community efforts.[5,7,23] Given the disproportionate prevalence of schizophrenia patients among the IST population one expects that significant numbers will be treatment resistant and thus in need of clozapine; however, the literature provides limited insight into the extent to which the use of clozapine not only mitigates core psychosis symptoms, but also permits these very ill individuals to meet the three prongs of the *Dusky* standard.

The first paper to specifically document use of clozapine for competency restoration was a 2016 case report of a 49-year-old male with a schizophrenia spectrum disorder who responded to clozapine monotherapy.[24] After three weeks on the clozapine dose that proved effective, he was less preoccupied with auditory hallucinations and delusions, had logical thought processes, actively participated in court education groups, and demonstrated good factual and rational understanding of court proceedings. He was readmitted 15 months later for a different offense but refused to cooperate with the resumption of clozapine and could not be restored despite trials of olanzapine and of haloperidol up to 20 mg per day.[24] The 2020 publication by Ghossoub *et al.* was the first to examine forensic outcomes in a broader cohort of clozapine treated adult IST patients with schizophrenia or bipolar diagnoses hospitalized between July 2011 and June 2017 at the Metropolitan Saint Louis Psychiatric Center.[25] Of 240 patients admitted with those diagnoses, 25 were started on clozapine and 15 were eventually discharged, with eight of 25 started on clozapine restored to competency (32%).[25] There is a need to confirm those findings, and thereby expand the database on the feasibility and the forensic outcomes of clozapine treatment in this population.

Methods

Patient Population

This study was approved by the Committee for the Protection of Human Subjects. The California Department of State Hospitals (Cal-DSH) comprises five campuses totaling more than 6,600 patients, with Napa State Hospital (DSH-Napa) having a census of 1,200 individuals. This study was a retrospective

review of patients admitted to DSH-Napa from 2014 to 2018 as IST who had a clozapine trial initiated during this period. For patients with multiple DSH-Napa admissions with a prescription of clozapine during 2014–2018 only the first clozapine trial was examined. The clozapine start date was defined by the first day clozapine was dispensed. Only those patients discharged at time of record review with a determination of competency status were included in the data analysis.

A total of 199 clozapine-treated patients who met the above criteria were identified using archival data from the Admissions/Discharge/Transfer system and Pharmacy Hospital Operations system managed by the Cal-DSH Data Management Office. Extracted data included information on age, sex, legal status, race/ethnicity, date of clozapine start, date of clozapine discontinuation (if applicable), length of stay at DSH-Napa, and admission and discharge diagnoses. Eight patients were excluded from the study because they were not discharged from DSH-Napa as restored to competency but remained in the hospital and were civilly committed as dangerous or gravely disabled. These eight patients were hospitalized as conservatees as they could not be safely discharged to the community within the 3-year maximum commitment term for competency restoration as provided for under California law at that time.

For the remaining sample of 191 evaluable individuals, competency status (e.g., whether or not restored to competency or deemed unlikely to be restored) was extracted from court reports tracked by the DSH-Napa Forensics Services unit. Patients were grouped based on two main criteria: whether they were maintained on clozapine until discharge or discontinued from clozapine prior to discharge, and whether or not they were restored to competency. This classification yielded four cohorts for analysis: patients maintained on clozapine until discharge and restored to competency (Cloz/Rest, $n = 69$), patients maintained on clozapine and not restored to competency (Cloz/NonRest, $n = 104$), patients discontinued from clozapine and restored to competency (ClozDC/Rest, $n = 7$), and patients discontinued from clozapine and not restored to competency (ClozDC/NonRest, $n = 11$).

Competency Restoration Procedure

At DSH-Napa, every patient receives a psychiatric assessment on the day of admission from which a preliminary diagnosis and treatment plan is formulated. IST patients also receive an initial psychological exam by a psychologist within seven days of admission that includes an assessment of competency to stand trial and screening assessments for malingering and cognitive dysfunction. Every IST patient receives an educational competency training packet (available in seven languages), regular instructional classes on the court material, and frequent assessments of trial competence by the treatment team. This assessment is forwarded to the Forensic Services Department for review by forensic psychiatrists and psychologists. If the assessments indicate a patient is trial competent, the patient is interviewed by a forensic specialist and a report issued to the committing county. During the years 2014 to 2018 the state of California provided for a commitment of up to three years for competency restoration. For patients still residing at DSH-Napa with three months left on their court order, an opinion on likelihood of competency restoration within the remaining commitment time is sent by Forensic Services to the court.

Data Processing and Analysis

All analyses were conducted with SPSS version 26. Statistical analyses included chi-square to assess differences in demographic characteristics and analysis of variance to assess differences in lengths of stay between the four groups. Post hoc Tukey comparisons were used to specifically identify which variables differed significantly between groups.

Results

As noted in Table 1, 74 percent of the sample were male, 45 percent white, and 42 percent had ages within the decile of 30–39 years. Most did not have a prior IST admission ($n = 133$, 70%) or any other DSH admission ($n = 117$, 61%). There were no significant differences between the four groups in demographic characteristics including: gender, age, race/ethnicity, prior DSH admission or prior IST admission, primary diagnoses or comorbid diagnoses (substance use disorder, personality disorder and cognitive impairment, as illustrated in Table 2). Ninety-three percent ($n = 177$) of the sample had a primary diagnosis of schizophrenia or another psychotic disorder, five were diagnosed with bipolar disorder

Table 1 Demographics of Patient Population

	Discharged on Clozapine				Clozapine Discontinued Prior to Discharge			
	Restored ($n=69$)		Not Restored ($n=104$)		Restored ($n=7$)		Not Restored ($n=11$)	
Demographics	*n*	%	*n*	%	*n*	%	*n*	%
Gender								
Male	52	75.4	78	75.0	4	57.1	7	63.6
Female	17	24.6	26	25.0	3	42.9	4	36.4
Age								
19–29	22	31.9	20	19.2	2	28.6	2	18.2
30–39	27	39.1	45	43.3	2	28.6	6	54.5
40–49	12	17.4	17	16.3	3	42.9	0	–
50–59	6	8.7	17	16.3	0	–	3	27.3
60+	2	2.9	5	4.8	0	–	0	–
Ethnicity/Race								
White	33	47.8	47	45.2	3	42.9	3	27.3
Black	20	29.0	29	27.9	2	28.6	4	36.4
Hispanic	7	10.1	17	16.3	1	14.3	2	18.2
Asian	6	8.7	9	8.7	1	14.3	2	18.2
Other[a]	3	4.3	2	1.9	0	–	0	–
Prior DSH Admission								
Yes	28	40.6	40	38.5	2	28.6	4	36.4
No	41	59.4	64	61.5	5	71.4	7	63.6
Prior IST Admission								
Yes	22	31.9	31	29.8	2	28.6	3	27.3
No	47	68.1	73	70.2	5	71.4	8	72.7

Note. A chi-square analysis indicated that there was no significant relationship between groups pertaining to patient demographics. DSH = Department of State Hospitals; IST = incompetent to stand trial.
[a] "Other" ethnicity includes American Indian and Polynesian.

(2.6%), and nine (4.7%) received a diagnosis other than schizophrenia or bipolar disorders.

From the sample of 191 patients, 173 remained on clozapine at time of discharge (90.6%), and 76 (39.8%) were deemed competent to stand trial. Among those discharged on clozapine, 69 (36.1%) were restored to competency, and the total hospital length of stay (LOS) for the Cloz/Rest cohort was

Table 2 Diagnosis Information for Patient Population Including Comorbid Substance Use Disorder, Personality Disorder and Cognitive Impairment

	Discharged on Clozapine				Clozapine Discontinued Prior to Discharge			
	Restored ($n=69$)		Not Restored ($n=104$)		Restored ($n=7$)		Not Restored ($n=11$)	
Diagnoses	*n*	%	*n*	%	*n*	%	*n*	%
Primary Diagnosis								
Schizophrenia spectrum	55	79.7	91	87.5	6	85.7	10	90.9
Other psychotic disorder	5	7.2	8	7.7	1	14.3	1	9.1
Bipolar disorder	3	4.3	2	1.9	0	–	0	–
Substance use disorder	1	1.4	1	1.0	0	–	0	–
Deferred	5	7.2	2	1.9	0	–	0	–
Substance Use Disorder								
Yes	41	59.4	53	51.0	5	71.4	4	36.4
No	28	40.6	51	49.0	2	28.6	7	63.6
Personality Disorder[a]								
Yes	6	8.7	1	1.0	0	–	0	–
No	63	91.3	103	99.0	7	100.0	11	100.0
Cognitive Impairment								
Yes	2	2.9	8	7.7	0	–	0	–
No	67	97.1	96	92.3	7	100.0	11	100.0

Note. A chi-square analysis indicated that there was no significant relationship between groups pertaining to patient demographics.
[a] Personality disorder diagnoses include antisocial personality disorder, borderline personality disorder, narcissistic personality disorder, and other specified personality disorder.

Table 3 Length of Stay (LOS) in Days before Starting Clozapine, on Clozapine Trial and after Clozapine Trial Discontinued

	Discharged on Clozapine		Clozapine Discontinued Prior to Discharge			
Hospital Days	Restored ($n = 69$)	Not Restored ($n = 104$)	Restored ($n = 7$)	Not Restored ($n = 11$)	Test Stat	p
Before starting clozapine	227.19 ± 171.60	330.03 ± 197.22	353.86 ± 260.14	413.64 ± 215.52	F = 5.632 (df = 3)	.001[a]
On clozapine	174.43 ± 142.29	239.66 ± 113.77	99.86 ± 83.01	149.27 ± 122.37	F = 6.464 (df = 3)	.000[b]
After clozapine discontinued	–	–	93.43 ± 69.74	195.55 ± 164.88	F = 2.371 (df = 1)	.143[c]
Total Hospital (Length of Stay)	397.25 ± 230.87	567.04 ± 209.75	545.43 ± 250.16	673.36 ± 163.77	F = 10.75 (df = 3)	.000[d]

Note. Statistical significance was determined by using analysis of variance and the post hoc Tukey's multiple comparisons test. Cloz/Rest = patients maintained on clozapine until discharge and restored to competency; ClozDC/NonRest = patients discontinued from clozapine and not restored to competency; Cloz/NonRest = patients maintained on clozapine and not restored to competency.

[a] There were statistically significant between-group differences in length of stay (LOS) before the start of the clozapine trial, $F(3, 187) = 5.632$, $p = .001$): Cloz/Rest (227.19 ± 171.60 days) was shorter than ClozDC/NonRest (413.64 ± 215.52 days) and Cloz/NonRest (330.03 ± 197.22 days).

[b] Among those who were discharged on clozapine there were statistically significant differences in the time on clozapine, $F(3, 187) = 6.464$, $p = .000$): Cloz/NonRest (239.66 ± 113.77 days) and Cloz/Rest (174.43 ± 142.29 days).

[c] Among those who had clozapine discontinued before hospital discharge, there were no statistically significant differences between groups in the length of stay (LOS) after clozapine was discontinued.

[d] There were statistically significant between group differences in total LOS (F [3, 187] = 10.75, p = .000): Cloz/Rest (397.25 ± 230.87 days) was shorter than ClozDC/NonRest (673.36 ± 163.77 days) and Cloz/NonRest (567.04 ± 209.75 days).

significantly shorter than for the other three patient cohorts:
Cloz/Rest mean = 397.25 ± 230.87 days, ClozDC/NonRest mean = 673.36 ± 163.77 days, Cloz/NonRest mean = 567.04 ± 209.75 days, ClozDC/Rest mean = 545.43 ± 250.16 days, $F(3, 187) = 10.75$ ($P < .001$) (see Table 3). There were statistically significant differences for LOS before commencing the clozapine trial. Post hoc Tukey comparisons indicated that the Cloz/Rest cohort had a significantly shorter LOS before the clozapine trial (mean = 227.19 ± 171.60 days) than did the ClozDC/NonRest cohort (mean = 413.64 ± 215.52 days) and the Cloz/NonRest cohort (mean = 330.03 ± 197.22 days), $F(3, 187) = 5.632$, $P = .001$. There were also statistically significant differences for LOS on clozapine. Post hoc Tukey comparisons indicated that the Cloz/NonRest group had a significantly longer LOS on clozapine (mean = 239.66 ± 113.77 days) than did the ClozDC/Rest group (mean = 99.86 ± 83.01 days) and the Cloz/Rest group (mean = 174.43 ± 142.29 days), $F(3, 187) = 6.464$, $P = .000$.

Discussion

The importance of managing patients with TRS rests in the fact that they are but a fraction of the schizophrenia population, yet they exert an outsized influence on the costs associated with this disorder.[17,26] Given the resources devoted to competency restoration for psychosis patients there is a need to provide clinicians and courts data on success rates with more intractable cases that necessitate the use of clozapine. On the most basic level, Sheitman *et al.* have argued that no forensic patients with a clinical indication for clozapine should be deprived of a trial regardless of where they reside, as this would fall below the accepted standard of practice.[21] Moreover, the data presented here, replicating the findings by Ghossoub and colleagues, indicate that patients with serious mental illnesses requiring clozapine treatment can be restored to trial competency.[22]

These results thus expand nearly eight-fold the database on clozapine use in IST patients and permit some important conclusions to be drawn using the combined experience at DSH-Napa and Metropolitan Saint Louis Psychiatric Center. Significantly, 60 percent of patients at the Metropolitan Saint Louis Psychiatric Center and over 90 percent of the DSH-Napa sample were discharged on clozapine, indicating that clozapine treatment can be successfully managed in forensic settings. In addition, 36 percent of the DSH-Napa IST cohort were restored to competency, a value very close to the 32 percent figure from the Saint Louis sample.[25] This confirmation of the Saint Louis data should temper clinician reluctance about using clozapine to restore TRS patients to trial competency, since one-third are expected to be restorable. In terms of cost effectiveness, and from a human rights standpoint, sites that have been underutilizing clozapine should note that the 36 percent of the sample who were restored and discharged on clozapine had a total mean LOS that was on average six months shorter than for other patients. As noted previously, antipsychotics other than clozapine are ineffective for

TRS, with response rates less than 5 percent; thus, one would expect that very few patients discontinuing clozapine would have sufficient improvement on another antipsychotic to be restored. That seven of 18 in the clozapine discontinuation group were restored does not undermine the basic premise that only clozapine is effective for TRS. Instead, it points to the difficulty clinicians may have, even in controlled forensic psychiatric units, in differentiating pharmacokinetic or adherence failures from TRS.[27]

The expected cost savings from decreased LOS should stimulate investment in clinician education and resources that promote clozapine use for IST patients. Compared with clinically based discharge criteria, the finding that 60 percent of those discharged on clozapine could not be restored might reflect the fact that the *Dusky* standard includes cognitive components (e.g., mastery of court material) not typically required for discharge from a community psychiatric inpatient unit. While clozapine was sufficiently effective in reducing positive symptoms of psychosis to permit discharge, many of these patients possess cognitive dysfunction that cannot be remediated by antipsychotic therapy, and thus were unable to master the court material. It is interesting to note that a longer LOS prior to commencing clozapine was associated with lower rates of restoration (Cloz/NonRest 567.04 ± 209.75 days v. Cloz/Rest 397.25 ± 230.87 days; $P = .000$). The literature indicates that delays in starting clozapine may decrease chances of response among TRS patients.[28–30] Whether earlier use of clozapine in IST individuals with TRS might improve restoration is worthy of future study.[31]

Limitations of this analysis include the lack of research related tools for establishing diagnoses and rating symptoms, and that clozapine use was based completely on clinician judgment, introducing a source of heterogeneity among the possible clinical indications for clozapine. Whether the use of clozapine through time of discharge in 90 percent of this cohort can be replicated outside of a state hospital setting is unknown, but it does establish a standard for successful implementation of a clozapine trial in IST patients with serious mental illness. It is hoped that future studies will add to the results presented here, and help establish that access to clozapine is an evidenced-based treatment for IST patients with appropriate clinical indications, and one with a significant chance of competency restoration.

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