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PSYCHIATRIC COMORBIDITIES AND IN-HOSPITAL OUTCOMES IN METHAMPHETAMINE-ASSOCIATED MYOCARDIAL INFARCTION: A CASE SERIES

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Abstract

Background: Psychiatric disorders are common in methamphetamine use disorder, yet their relationship with in-hospital outcomes after methamphetamine-associated myocardial infarction (MA-MI) has not been examined. This case series describes the prevalence of pre-existing psychiatric diagnoses in MA-MI and explores associated patterns in mortality, revascularization, and discharge disposition. Methods: We reviewed records of 134 consecutive adults (aged 18–75) admitted with a primary diagnosis of acute myocardial infarction and a positive urine methamphetamine screen within 48 hours of admission at a university-affiliated tertiary care center in Handan, China, between 2019 and 2024. Pre-existing psychiatric diagnoses were ascertained by manual chart review and grouped as psychotic, mood, or anxiety disorders. This study is an exploratory case series and was not powered for hypothesis testing. All statistical comparisons are descriptive; p-values, where reported, are unadjusted and not definitive. Results: Fifty patients (37%) had a documented pre-existing psychiatric diagnosis. In-hospital death occurred in 20.0% (10 of 50) of patients with psychiatric

comorbidity versus 3.6% (3 of 84) of those without, an absolute risk difference of 16.4 percentage points (95% CI: 4.7%–28.2%). The mortality difference was entirely concentrated in the psychotic-disorder subgroup (10 of 18, 55.6%); no deaths occurred among patients with mood or anxiety disorders. Revascularization was attempted in 44% versus 67% of psychiatric and non-psychiatric patients, respectively (ARD −22.7 percentage points, 95% CI: −39.7% to −5.6%). Findings were directionally similar in a sensitivity analysis restricted to patients with methamphetamine-only toxicology (n=96). Conclusion: This case series documents a 37% prevalence of pre-existing psychiatric comorbidity in MA-MI, with numerically higher mortality and lower revascularization in the psychiatric subgroup. The most extreme risk was concentrated in the psychotic-disorder subset, though the small sample precludes causal inference. These hypothesis-generating observations underscore the need for prospective multicenter investigations.

1. INTRODUCTION

Methamphetamine-associated myocardial infarction (MA-MI) is a growing clinical problem. Compared with non-methamphetamine acute coronary syndrome, MA-MI tends to occur in younger patients who carry fewer traditional cardiovascular risk factors yet face substantially higher mortality an adjusted hazard ratio of 2.08 (95% CI 1.40–3.09) in one large cohort [1]. A California-based study found that methamphetamine exposure was associated with a 32% increase in incident cardiovascular disease [2]. The cardiac toxicity of methamphetamine—catecholamine excess, vasospasm, and accelerated atherosclerosis is well described [3], and the 2021 AHA chest pain guideline specifically recommends considering methamphetamine as a cause of acute MI in younger adults [5].

Methamphetamine use is also an independent cardiovascular risk factor with a mortality profile distinct from other acute coronary syndromes. Cohort studies consistently document elevated rates of MI and post-MI death even after adjustment for age and conventional risk factors [1,2,7,18]. A ten-year Taiwanese follow-up study found elevated rates of arrhythmia and hemorrhagic stroke in methamphetamine users [18]. The ADDICT-ICCU study showed that recreational drug use in acute cardiac patients multiplied the odds of in-hospital major adverse events by nearly nine, with polysubstance use adding further risk [7]. These findings point to catecholamine-mediated mechanisms distinct from standard plaque-rupture physiology [3]. Importantly, cocaine-which shares mechanisms of sympathomimetic toxicity and coronary vasospasm with methamphetamine is co-detected in a substantial minority of MA-MI patients, introducing confounding that must be explicitly addressed in any outcomes analysis [2,3].

Psychiatric disorders accompany methamphetamine use disorder at rates far exceeding the general population. Roughly 16% of users have comorbid mood disorders, 13% have psychotic disorders, and 7% have anxiety disorders [4]. Chronic use independently raises the risk of schizophrenia and related neuropsychiatric conditions [4], and longer duration of use is associated with more severe psychiatric symptoms [19,20]. Temporal relationships run in both directions: adolescent amphetamine use predicts mental health difficulties in young adulthood, and pre-existing mental health problems predict later stimulant use, particularly in women [21]. By the time a methamphetamine user presents with an MI typically in the fifth decade-years of psychiatric burden may have accumulated, potentially affecting how patients access care, tolerate treatment, and adhere to medications [1,4].

In the general MI population, psychiatric comorbidity measurably worsens prognosis, and the magnitude of risk tracks with diagnosis. Schizophrenia carries the highest post-MI mortality: adjusted 30-day odds ratios of 1.95 in a Scottish cohort and 2.58 in the Swedish SWEDEHEART registry [10,12]. Bipolar disorder and major depression fall in an intermediate range (odds ratios 1.53 and 1.31) [10,14]. A meta-analysis of 22 studies found a 40% increase in post-ACS mortality for patients with severe mental illness [10]. Part of this excess mortality traces back to lower rates of invasive management patients with schizophrenia are roughly half as likely to receive coronary angiography or percutaneous coronary intervention as those without

psychiatric illness [9–11]. When guideline-directed therapy is actually delivered, the mortality gap narrows substantially [11,12,22]. The 2023 AHA/ACC chronic coronary disease guideline reinforces the importance of addressing substance use and psychiatric comorbidities to improve cardiovascular outcomes [24].

The psychiatric-MI literature has not, however, examined MA-MI specifically. A systematic review of methamphetamine's cardiac complications found that only one of eleven included studies addressed dual diagnosis-a conspicuous gap given how frequently these conditions co-occur [23]. Existing work treats methamphetamine-related MI, psychiatric comorbidity in MI, and psychiatric prevalence in methamphetamine users as separate questions. The clinical implications of their intersection are substantial: if psychiatric illness amplifies the already elevated mortality of MA-MI, integrated cardio-psychiatric pathways could prioritize the most vulnerable patients.

To address this gap, we conducted a retrospective chart review of 134 consecutive patients with confirmed MA-MI at a single institution. The specific aims were as follows:

(1) To describe the prevalence and subtypes of pre-existing psychiatric diagnoses in patients admitted with MA-MI.

(2) To explore whether in-hospital mortality, revascularization rates, and discharge disposition differed between patients with and without psychiatric comorbidity, overall and stratified by psychiatric subtype.

(3) To conduct a sensitivity analysis restricted to patients with methamphetamine-only toxicology, partially addressing the confounding effect of cocaine co-use.

This is an exploratory analysis, not designed to establish independent predictors, and is intended to generate testable hypotheses for larger prospective studies.

2. METHODS

Study Design and Setting

We conducted a retrospective chart review of consecutive patients admitted to the Affiliated Hospital of Hebei University, China-a university-affiliated tertiary care center between 1 January 2019 and 31 December 2024. The Institutional Review Board approved the study and waived the requirement for informed consent.

Case Identification and Eligibility

The electronic health record was queried for all discharges carrying a primary ICD-10 code for acute myocardial infarction (I21.0–I21.4, I21.9, I21.A1, I21.A9). Patients aged 18–75 who had a positive qualitative urine toxicology screen for methamphetamine (amphetamine/methamphetamine immunoassay) within 48 hours of admission were included. Urine toxicology screens confirm recent substance exposure but do not quantify dose, establish chronicity, or demonstrate direct causality for the MI; the 48-hour window is a proxy intended to capture pre-admission use. Exclusion criteria were: isolated cocaine or opioid positivity without concurrent methamphetamine; MI adjudicated as type 2 in the setting of sepsis, severe anemia, or respiratory failure; transfer from another acute care facility; and missing or incomplete discharge disposition. Toxicology screening was not protocolized across the study period, so some methamphetamine-positive patients may have been missed if screening was not ordered.

Data Extraction

A single trained investigator abstracted all data using a standardized form. The single-extractor design may under-document psychiatric conditions, particularly in patients with limited prior healthcare contact, and no formal structured psychiatric diagnostic interview was used to confirm chart-listed diagnoses. Variables collected included demographics, cardiovascular risk factors, MI type (STEMI vs. NSTEMI), ejection fraction on index echocardiogram, and in-hospital procedures (coronary angiography, percutaneous coronary intervention [PCI], and coronary artery bypass grafting [CABG]). Co-detected substances were recorded from the toxicology results.

Pre-existing psychiatric diagnoses were extracted from problem lists, psychiatry consultation notes, and discharge summaries. Diagnoses were categorized hierarchically and mutually exclusively: schizophrenia-spectrum disorders (ICD-10 F20, F25), mood disorders (bipolar disorder F31; major depressive disorder F32–F33), anxiety disorders including PTSD (F40–F41, F43.1), or no documented diagnosis. When multiple diagnoses were present, the most severe took precedence psychotic over mood, mood over anxiety. The distinction between pre-existing psychotic disorder and persistent methamphetamine-induced psychosis cannot be reliably made from retrospective chart review, and this represents an important diagnostic limitation.

Outcomes

The primary outcome was in-hospital all-cause mortality. Secondary outcomes were attempted revascularization (PCI or CABG), length of stay in days, and discharge against medical advice (DAMA). Revascularization is reported as any attempt, and separately by modality (PCI vs. CABG), stratified by psychiatric subgroup.

Statistical Analysis

This study is an exploratory case series and was not powered for hypothesis testing. All statistical comparisons are descriptive; p-values, where reported, are unadjusted and not definitive. Continuous variables are summarized as median and interquartile range (IQR) and compared using the Mann-Whitney U test. Categorical variables are reported as counts and percentages. For key binary outcomes, absolute risk differences (ARDs) and 95% confidence intervals were computed using the normal approximation to the binomial. No multivariable regression was performed given the risk of overfitting. All analyses were conducted in Stata/SE 17.0. No external funding supported this study.

3. RESULTS

Cohort Characteristics

One hundred thirty-four patients met the inclusion criteria. Median age was 49 years (IQR 41–56), and 78% were male. Public insurance covered 84 patients (63%), private insurance 32 (24%), and 18 (13%) were uninsured. NSTEMI was the more common presentation (n=78, 58%), with STEMI accounting for the remaining 56 (42%). Median ejection fraction was 40% (IQR 30–50). Traditional cardiovascular risk factors were prevalent: hypertension in 55%, diabetes in 32%, hyperlipidemia in 45%, active smoking in 71%, obesity in 26%, and chronic kidney disease in 11%. Cocaine was co-detected in 39 patients (29%), cannabis in 24 (18%), and opioids in 11 (8%). Ninety-six patients (72%) had methamphetamine as the only detected substance (Table 1).

Psychiatric Comorbidity

Fifty of 134 patients (37%) had a documented pre-existing psychiatric diagnosis: psychotic disorders in 18 (36% of psychiatric cases), mood disorders in 22 (44%), and anxiety disorders in 10 (20%). Patients with psychiatric comorbidity were younger than those without (median 45 vs. 52 years), had a similar rate of polysubstance use (28% vs. 29%), and had a similar rate of cocaine co-detection (28% vs. 30%). Complete baseline characteristics are shown in Table 1.

Primary and Secondary Outcomes

In-hospital death occurred in 10 of 50 patients with psychiatric comorbidity (20.0%) versus 3 of 84 patients without (3.6%), an absolute risk difference of 16.4 percentage points (95% CI: 4.7%–28.2%). All ten deaths in the psychiatric group were among the 18 patients with psychotic disorders (55.6% case fatality), yielding an absolute risk difference of 52.0 percentage points (95% CI: 29.1%–75.0%) relative to the no-diagnosis group. No deaths occurred in the mood-disorder or anxiety-disorder subgroups. The single mechanism of death among psychotic-disorder patients was refractory cardiogenic shock in nine cases and cardiac arrest in one; all ten had documented antipsychotic use on admission.

Revascularization was attempted in 22 of 50 psychiatric patients (44%) versus 56 of 84 non-psychiatric patients (67%), an ARD of −22.7 percentage points (95% CI: −39.7% to −5.6%). Revascularization rates by psychiatric subgroup are shown in Table 2. PCI accounted for the majority of revascularizations in all groups; CABG was performed in six non-psychiatric and two psychiatric patients. Discharge against medical advice occurred in 18 of 50 psychiatric patients (36%) versus 10 of 84 without psychiatric diagnosis (11.9%), an ARD of 24.1 percentage points (95% CI: 9.1%–39.1%). Median length of stay was 6 days (IQR 3–11) versus 4 days (IQR 2–7) in psychiatric versus non-psychiatric patients. Detailed outcomes by psychiatric subgroup are presented in Table 2.

Exploratory Observations

Among the 18 patients with psychotic disorders, no patient had documentation of a pre-procedure psychiatric consultation. Reasons for this-such as acute agitation, consultation refusal, clinical futility, or absence of a formal referral pathway-cannot be determined from this retrospective design. In two of the fatal cases, chart review indicated that recognition of STEMI was delayed because chest pain was initially attributed to anxiety or agitation, consistent with diagnostic overshadowing. Three of the 18 patients with psychotic disorders had no documented primary care visit in the year preceding admission.

Sensitivity Analysis: Methamphetamine-Only Patients

Cocaine was co-detected in 29% of the cohort and is an independent cause of coronary vasospasm, MI, and neuropsychiatric symptoms. To partially address this

confound, we restricted the primary analysis to the 96 patients (72%) in whom methamphetamine was the only detected substance (36 with psychiatric diagnosis, 60 without). In this methamphetamine-only subgroup, in-hospital death occurred in 7 of 36 psychiatric patients (19.4%) versus 2 of 60 non-psychiatric patients (3.3%), an ARD of 16.1% (95% CI: 3.2%–28.9%). Revascularization and DAMA findings were directionally consistent with the overall cohort (Table 3). The persistence of the mortality difference in the methamphetamine-only cohort suggests that the association is not solely attributable to cocaine co-exposure, though residual confounding cannot be excluded.

Table 1. ***Baseline Characteristics of 134 Patients with Methamphetamine-Associated Myocardial Infarction, Stratified by Psychiatric Comorbidity Status.***

Characteristic	Any Psychiatric Diagnosis (n=50)	No Psychiatric Diagnosis (n=84)	Total (N=134)
Demographics			
Age, years, median (IQR)	45 (39–53)	52 (43–58)	49 (41–56)
Male sex, n (%)	39 (78%)	66 (79%)	105 (78%)
Public insurance, n (%)	32 (64%)	52 (62%)	84 (63%)
Private insurance, n (%)	12 (24%)	20 (24%)	32 (24%)
Uninsured, n (%)	6 (12%)	12 (14%)	18 (13%)
Cardiovascular Risk Factors			
Hypertension, n (%)	26 (52%)	48 (57%)	74 (55%)
Diabetes mellitus, n (%)	17 (34%)	26 (31%)	43 (32%)
Hyperlipidemia, n (%)	22 (44%)	38 (45%)	60 (45%)
Active smoking, n (%)	37 (74%)	58 (69%)	95 (71%)
Obesity, n (%)	14 (28%)	21 (25%)	35 (26%)
CKD, n (%)	6 (12%)	9 (11%)	15 (11%)
MI Presentation			
STEMI, n (%)	20 (40%)	36 (43%)	56 (42%)
NSTEMI, n (%)	30 (60%)	48 (57%)	78 (58%)
Ejection fraction, %, median (IQR)	38 (28–50)	41 (30–50)	40 (30–50)
Toxicology (Co-detected Substances)			
Cocaine, n (%)	14 (28%)	25 (30%)	39 (29%)
Cannabis, n (%)	10 (20%)	14 (17%)	24 (18%)
Opioids, n (%)	4 (8%)	7 (8%)	11 (8%)
Polysubstance use, n (%)	14 (28%)	24 (29%)	38 (28%)
Methamphetamine only, n (%)	36 (72%)	60 (71%)	96 (72%)

IQR = interquartile range; CKD = chronic kidney disease; STEMI = ST-elevation myocardial infarction; NSTEMI = non-ST-elevation myocardial infarction.

Table 2. *In-Hospital Outcomes Stratified by Psychiatric Diagnostic Subgroup. Reference comparator is the No Diagnosis group (n=84).*

Outcome	No Diagnosis (n=84)	Psychotic Disorder (n=18)	Mood Disorder (n=22)	Anxiety Disorder (n=10)	Total Psych (n=50)
Mortality					
In-hospital death, n (%)	3 (3.6%)	10 (55.6%)	0 (0%)	0 (0%)	10 (20%)
Cause: Cardiogenic shock, n (%)	2 (2.4%)	9 (50.0%)	—	—	9 (18%)
Cause: Cardiac arrest, n (%)	1 (1.2%)	1 (5.6%)	0 (0%)	0 (0%)	1 (2%)
Revascularization					
Any revascularization, n (%)	56 (66.7%)	7 (38.9%)	11 (50.0%)	4 (40.0%)	22 (44%)
PCI, n (%)	50 (59.5%)	6 (33.3%)	10 (45.5%)	4 (40.0%)	20 (40%)
CABG, n (%)	6 (7.1%)	1 (5.6%)	1 (4.5%)	0 (0%)	2 (4%)
Discharge Disposition					
DAMA, n (%)	10 (11.9%)	8 (44.4%)	7 (31.8%)	3 (30.0%)	18 (36%)
Length of stay, days, median (IQR)	4 (2–7)	7 (4–14)	6 (3–10)	5 (3–9)	6 (3–11)
Pre-procedure Consultation					
Psychiatric consultation documented, n (%)	N/A	0 (0%)	3 (13.6%)	2 (20.0%)	5 (10%)

DAMA = discharge against medical advice; PCI = percutaneous coronary intervention; CABG = coronary artery bypass grafting; N/A = not applicable; — = no events. Absolute differences are unadjusted and descriptive only.

Table 3. *Sensitivity Analysis: In-Hospital Outcomes Restricted to Patients with Methamphetamine-Only Positive Toxicology (No Cocaine Co-detection; n=96).*

Outcome	Psychiatric Diagnosis (n=36)	No Psychiatric Diagnosis (n=60)	ARD (95% CI)
In-hospital death, n (%)	7 (19.4%)	2 (3.3%)	16.1% (3.2%–28.9%)
Any revascularization, n (%)	15 (41.7%)	40 (66.7%)	−25.0% (−43.7%–−6.3%)
DAMA, n (%)	14 (38.9%)	7 (11.7%)	27.2% (9.5%–45.0%)
Cocaine co-detected, n (%)	0 (0%)	0 (0%)	—

ARD = absolute risk difference; CI = confidence interval computed by normal approximation. This analysis is exploratory and underpowered; confidence intervals are wide and should be interpreted with caution.

4. DISCUSSION

This study is the first to describe psychiatric comorbidity in a defined cohort of patients with MA-MI. Three observations warrant particular attention: a high prevalence of pre-existing psychiatric diagnoses (37%), a numerically large absolute difference in in-hospital mortality concentrated exclusively in the psychotic-disorder subgroup, and a pattern of lower revascularization and higher DAMA rates across all psychiatric subgroups relative to those without a psychiatric diagnosis. These findings are exploratory and must be interpreted in the context of the study's important methodological limitations, which are addressed below.

Psychiatric Prevalence and Mortality

The 37% prevalence of psychiatric comorbidity is consistent with combined prevalence estimates of approximately 36% in the broader methamphetamine-

use disorder literature [4]. The proportion with psychotic disorders (36% of psychiatric diagnoses) exceeds the roughly 13% typically reported in population prevalence studies [4], possibly reflecting more frequent hospital contact and chart documentation in this group, or alternatively a true elevation in MI risk among patients with psychosis-a notion consistent with evidence that schizophrenia is associated with MI occurring approximately a decade earlier than in the general population [8,10].

The 55.6% case fatality rate in the psychotic-disorder subgroup is striking even given the small numbers, and mirrors the well-documented finding that schizophrenia carries the highest post-MI mortality in the general population [10,11,12]. Several convergent mechanisms may contribute. Delayed STEMI recognition-documented in two cases as attributable to diagnostic overshadowing-represents a potentially modifiable failure point. Additionally, whether adverse effects of antipsychotic medication, such as QTc prolongation, contributed to arrhythmic events in this cohort cannot be assessed without systematic ECG data, and this remains an important area for future study [3,6].

Revascularization Disparity and Lack of Psychiatric Consultation

The lower revascularization rate in psychiatric patients (44% vs. 67%, ARD −22.7%) aligns with a finding that appears repeatedly in the general psychiatric-MI literature. Fleetwood et al. found that patients with schizophrenia were only 57% as likely to receive revascularization [9], and similar gaps are documented by Mohamed et al. and Chan et al. [8,10]. Notably, no patient with a psychotic disorder had documentation of a pre-procedure psychiatric consultation. The reasons for this-whether related to acute agitation, patient refusal, clinician perception of futility, or absence of a structured referral pathway-cannot be determined from chart review alone. Goldfarb et al. demonstrated that when guideline-concordant therapy is provided to patients with severe mental illness, their post-MI mortality converges toward that of the general population, suggesting these disparities are modifiable [11]. Whether that finding extends to the MA-MI population requires prospective study.

Discharge Against Medical Advice

The elevated DAMA rate in the psychiatric group (36% vs. 12%, ARD 24.1%) is clinically consequential, as patients who leave before treatment completion cannot receive guideline-directed secondary prevention and face elevated re-infarction and readmission risk [13]. Substance use disorder is an established predictor of DAMA in cardiac patients [15,16,17]; the present data suggest that co-occurring psychiatric illness may compound this risk in MA-MI specifically, though the design cannot determine causation.

Confounding by Polysubstance Use

The most important methodological limitation of this study is the high rate of cocaine co-detection (29% overall). Cocaine independently causes coronary vasospasm, MI, and neuropsychiatric symptoms through mechanisms that overlap with methamphetamine [2,3]. Patients with psychiatric comorbidity had a similarly common cocaine co-detection rate to those without (28% vs. 30%), but both groups had substantial exposure. The study design cannot disentangle the independent contributions of methamphetamine versus cocaine to either MI pathophysiology or in-hospital outcomes. Some portion of the observed mortality difference may be cocaine-driven or attributable to other co-detected substances, and this remains an irreducible limitation of this single-center retrospective design. The sensitivity analysis restricted to methamphetamine-only patients (n=96) showed a directionally consistent mortality difference (ARD 16.1%), which suggests the overall association is not entirely a product of cocaine co-exposure-but wide confidence intervals in that subgroup preclude a definitive conclusion.

Implications

Taken together, these observations describe a clinical phenotype that clinicians across emergency medicine, cardiology, and hospital medicine should recognize: a younger patient with MA-MI and a history of psychotic or severe mood disorder may represent the highest-risk subgroup in an already high-risk population. Systematic psychiatric assessment during acute MI care in methamphetamine users, and the establishment of integrated cardio-psychiatric care pathways, warrants prospective study.

5. LIMITATIONS

This study has several important limitations. First, the sample of 134 patients with 13 outcome events is insufficient for adjusted regression analyses; all comparisons are unadjusted and hypothesis-generating only. Second, the single-center design at a Chinese university-affiliated tertiary care center limits generalizability to other practice settings and patient

populations. Third, psychiatric diagnoses were ascertained by a single investigator through chart review without a structured diagnostic interview, likely resulting in under-ascertainment-particularly for mood and anxiety disorders in patients with limited prior healthcare contact and possible misclassification between pre-existing psychosis and persistent methamphetamine-induced psychotic disorder. Fourth, the study design cannot quantify methamphetamine dose, frequency, or duration of use, nor can it differentiate between primary psychotic disorder and substance-induced psychosis, which may have distinct prognostic profiles. Fifth, cocaine co-detection in 29% of patients introduces confounding that cannot be fully addressed even in the methamphetamine-only sensitivity analysis, as other undetected or unrecorded substances may have been present. Sixth, urine toxicology confirms only preadmission exposure and cannot establish that methamphetamine use directly caused the MI. Seventh, toxicology screening was not standardized, and some methamphetamine-positive patients may not have been screened. Eighth, the inpatient-only design introduces potential survivor bias, as patients who died prior to admission or were not screened are excluded. Ninth, post-discharge data-including psychiatric follow-up, medication adherence, recurrent MI, and all-cause mortality-are unavailable, precluding any analysis of long-term outcomes or care linkage.

6. CONCLUSION

In this single-center case series of 134 patients with methamphetamine-associated myocardial infarction, 37% had a pre-existing psychiatric diagnosis. In-hospital mortality was numerically higher and revascularization rates lower among patients with psychiatric comorbidity, with the most extreme risk-55.6% case fatality-concentrated in the psychotic-disorder subgroup. Discharge against medical advice was three times more frequent in psychiatric patients. These differences persisted directionally in a sensitivity analysis restricted to patients without cocaine co-detection, though wide confidence intervals preclude firm conclusions. The absence of any pre-procedure psychiatric consultation in the psychotic-disorder subgroup, and the evidence of diagnostic overshadowing in two fatal cases, point to concrete gaps in acute care delivery. Systematic integration of psychiatric assessment and care during acute MI management for methamphetamine users warrants prospective evaluation. Confirmation requires prospective, multicenter studies with larger samples, standardized psychiatric evaluation, and post-discharge follow-up.

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