

The Treatment of Methamphetamine Psychosis in Thailand

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INTRODUCTION

YABA: Methamphetamine

Methamphetamine Abuse: euphorigenic effects

Methamphetamine Dependence

Methamphetamine Psychosis

METHAMPHETAMINE INTOXICATION

- **Moderate:** euphoria, restlessness, talkativeness, repetitive stereotyped behavior, irritability, tremor, emotional labile
- **Severe:** tachycardia, hypertension, mydriasis, grand mal seizures, hypertermia, paranoid delusions, hallucination (auditory, visual and tactile), ideas of reference, violence behavior

METHAMPHETAMINE WITHDRAWAL

- Dysphoric mood, depression
- fatigue
- hyperphagia
- rebound hypersomnia
- drug craving
- severe depression and suicidal ideation

METHAMPHETAMINE PSYCHOSIS

- Psychosis: persecutory delusion and hallucination predominant
- symptoms are similar to schizophrenia
- Connell: psychosis remission in a week
- Response to short term antipsychotic treatment

METHAMPHETAMINE PSYCHOSIS

DSM-IV

ICD-10

Onset: within 1 month

within 48 hours

Duration: 1 month

1-6 months

During intoxication

During withdrawal

METHAMPHETAMINE PSYCHOSIS

- **“Evolving process” :**
 - brief and transient psychotic episode
 - full-blown psychosis
- **Delusional development**
 - watching the world
 - being watched
 - idea of reference
 - delusion

JAPAN REPORT

➤ ***Sato et. al (1983,1986,1992)***

review- 3 type

- Transient type: 10 days
- Prolonged type: 11-30 days
- Persistence type > 30 days

➤ ***Iwanami et. al. (1994)***

104 ; abstinence MAP, antipsychotics Rx

- Transient type (54): 7 days
- Persistence type (16): > 3 months

METHAMPHETAMINE PSYCHOSIS

- *Japan reports:*

 - Acute type : a month

 - Chronic type: several months to several years

- How to differentiated with schizophrenia?

ACUTE METHAMPHETAMINE PSYCHOSIS

Mechanism:

Direct effect of methamphetamine
---> increase dopamine level

- Methamphetamine intoxication
- Psychotic remission in a few weeks

RELAPSE PSYCHOSIS / FLASH BACK

➤ Risk factors:

1. Reuse of MA: brain sensitization
 2. Alcohol drinking
 3. Psychosocial stressors
- } Cross sensitization

➤ Protective factors: antipsychotic medication?

CHRONIC METHAMPHETAMINE PSYCHOSIS

Mechanism: Permanent brain damage ?

Risk factors:

- prolonged use: >3 years, >5 years
- high dose, toxic dose
- predisposing factors:
 - genetic: family history of schizophrenia
 - pre-morbid neurological disorders

CNS EFFECTS

➤ Animal Studies:

High dose or prolonged use of MA-->
permanent dopamine producing cell damage

(NIDA Notes Research Findings 2000)

➤ Human Studies:

SPECT in MAP: Buffenstein A et. al

MRS in MA users: Ernst T and Chang L

PET in MA users: Volkow et. al

CHRONIC MAP AND SCHIZOPHRENIA

Similarity:

- clinical symptoms
- response to antipsychotics
- vulnerability to relapse

Difference:

- no premorbid personality
- better response after 6 months follow up
- less negative symptoms: blunt affect, alogia (poverty of speech and content of speech, thought blocking)

TREATMENT

Antipsychotic medication

- Conventional drugs: haloperidol etc.
- Atypical drugs: Risperidone, Olanzapine

2003 Cochrane Collaboration : “ *Treatment of amphetamine psychosis*”

Srisurapanont M, Kittirattanapaiboon P, Jarusraisin N:

Electronic searches; RCT, CCT

- no controlled trials of Rx of amp. Psychosis
- antipsychotic injection: abated agitation and psychosis within an hour

Methamphetamine Psychosis Studies in Thailand

GENERAL CHARACTERISTICS of MAP

	Visudhimark A.	Sanichwanakul K.	Jantarasak W.	Kittirattana- paiboon P.	Chakrabhand S.
Study Year	1998	1999	1999	2000	2002
Sample size	27	216	209	126	180
Sex (M:F)	12.5:1	9:1	6.2:1	7.4:1	7.2:1
Age (year)	20-29	21-30	20-29	21-30	21-30
Duration (Y)	1-3	0.5-1	1-3	0.5-1	1-3
Amount (tab)	2.5 ₊ 2.2	>1	3-5	2.5 ₊ 2.8	2-3
Route	smoke	smoke	smoke	smoke	smoke

PROMINENT SYMPTOMS of MAP

Symptoms (%)	Visudhimark A.	Sanichwanakul K.	Jantarasak W.	Kittirattana-paiboon P.
Paranoid delusion	85.2	94.9	85.6	96.8
Auditory hallucination	66.7	92.6	89.4	92.1
Visual hallucination	48.1	11.6	40.4	16.7
Insomnia	77.8	91.7	-	96.8

SYMPTOMATOLOGY of MAP

➤ *Srisurapanont M., et al (2001)*

Manchester scale: 2 factors

- **negative factor:** poverty of speech, psychomotor retardation and flattened incongruous affect
- **positive/disorganized factor:** delusions, hallucinations and incoherence speech

➤ *Sanichwanakul K. et al. (1999)*

Factors associated with the severity of symptoms (BPRS) : frequency of use, withdrawal >1week, smoking

INVESTIGATION for MAP

Kittirattanapaiboon P., et al. (2001)

Chronic MAP abusers: 4 weeks inpatients,
follow up at Month1, Month3, Month6
urine MA (immunoassay screening, GC/MS)
Hair MA (GC/MS)
Severity assessment (PANSS)

Results: The amount of MA in urine was significantly correlated with MA in hair ($p < 0.05$).
However, the severity of psychotic symptoms was not significant correlated with the amount of MA in urine and hair

CLINICAL COURSE of MAP

Jantarajak W (1999):

- Retrospective survey; 209 Pt.
- Admission periods about 2 weeks
- ECT 7.7%

Kittirattanapaiboon P. et al (2000):

- Prospective study; 126 Pt.
- BPRS wk 0, 1, 2
- Clinical improvement significant at wk 1, wk 2
- Rx: Haloperidol equivalent dose 6-10 mg/day
- ECT 4.0%

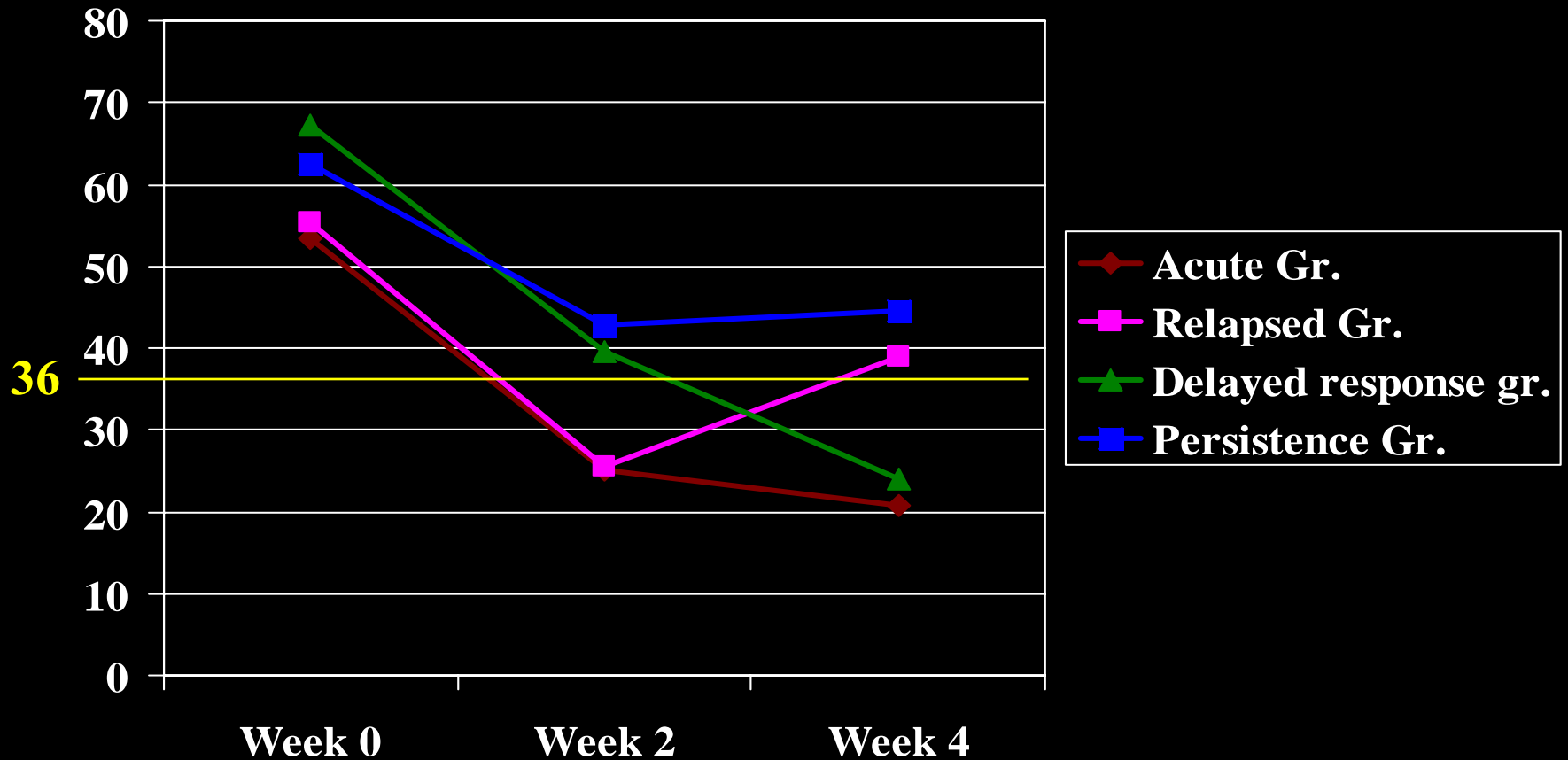
CLINICAL COURSE of MAP

Kittirattanapaiboon P. et al (2002):

- Prospective study in 8 Psych. hospital
- 154 Pt.; 4-week admission

		n	%
Acute type	2 wks	65	42.2%
Relapse type	2 wks	7	4.5%
Delayed response type	4 wks	60	39.0%
Persistence type	> 4 wks	22	14.3%

CLINICAL COURSE of MAP



CLINICAL COURSE of MAP

Chakrabhand S. et al (2002):

- Prospective study in 8 Psych. hospital
- 154 Pt.; 4-week admission
- Response to treatment at 2 weeks
 - Acute type (42.2%)
 - Prolonged type (57.8%)
- Risk factor of prolonged type:
 - Prolonged use >5 years,
 - BPRS at admission ≥ 55

CLINICAL COURSE of MAP

One year follow up studies (Hospital based):

- ***Jantarasak W (1999):*** 121/209 (57.9%)
relapse and readmission 31.4 %
- ***Kittirattanapaiboon P. et al (2000):*** 84/126 (66.7%)
 - relapse psychosis : 48 (57.1%)
 - reuse of MA: 42 (50.0%)
 - not use MA: 6 (7.1%)
(volatile, alcohol, stop antipsychotics)

CLINICAL COURSE of MAP

➤ *Mahatnirunkul S et al. (2002)*

Risk Factors of relapse psychosis:

6 months follow up (q 1 month): 40/97

Method: Survival analysis- cox regression model

- **Reuse of MA**

Hazard ratio = 2.90; 95%CI = 1.46-5.79

- **Other factors: Psychosocial stressors, other substances use, stop antipsychotics**
 - not significant

TREATMENT of MAP

“Effectiveness of Haloperidol in Treating Patients with Amphetamine Psychosis”

Pongtanya S, Sanichwanakul K,

Kittirattanapaiboon P, Phumpisanchai W (2000)

Open label four-week study: 40 Pt.

➤ High dose (10-15 mg/d): Low dose (4-8 mg/d) of haloperidol

Results: Both high and low doses is an effective treatment of amphetamine psychosis

TREATMENT of MAP

“ Pharmacological Treatment in Methamphetamine Psychosis ”

Sanichwanakul K,
Kittirattanapaiboon P, Phumpisanchai W (2002)

Prospective study in 8 Psych. hospital
154 Pt.; 4-week admission

Results: Injection Haloperidol // Oral
Haloperidol significant decrease severity of
psychotic symptoms

TREATMENT of MAP

“Risperidone in the Treatment of Amphetamine-induced Psychosis Patients”

Pongtanya S, Sanichwanakul K,
Kittirattanapaiboon P, Phumpisanchai W (2000)

Open label four-week study: 20 Pt., PANSS

➤ Risperidone 2-4 mg/day

Results: risperidone- effective treatment in amphetamine psychosis

PSYCHOSOCIAL TREATMENT

Principle: cycle disruption and relapse prevention

- **cognitive behavior method**
 - **individual therapy**
 - **family therapy/counseling**
 - **group psychotherapy, self help group, support group**

LONG-TERM OUTCOMES of MAP

➤ *Dumrongchai A. (2002)*

Review medical record MAP at Suan Prung Psychiatric Hospital: 1997-2001

Results: 20.1% persistence psychosis (abstinence) and change diagnosis to schizophrenia

Limitation: hospital based

LONG-TERM OUTCOMES of MAP

Kittirattanapaiboon P., et al (2006)

Assessment of methamphetamine psychosis (MAP) five years after hospitalization : pilot study

Community follow up (Chiang Mai Provinces)

MAP pt. who was first hospitalized at Suan Prung Psychiatric Hospital the year of 2000

Assessment the 5-year clinical outcomes

LONG-TERM OUTCOMES of MAP

Total cases	N (140)	%
Inclusion cases	63	45.0%
Exclusion cases	77	55.0%
Refuse to consent	8	5.7%
Dead	16	11.4%
Can not contact	53	37.9%

LONG-TERM OUTCOMES of MAP

Mini International Neuropsychiatric Interview (MINI)

Psychiatric Disorders	N (63)	%
Major Depression	1	1.6
Suicidality	13	20.6
Alcohol Abuse	16	31.7
Alcohol Dependence	20	25.2
Substance Abuse/Dependence	10	15.9
Generalized Anxiety Disorder	1	1.6
Antisocial Personality Disorder	4	6.3

LONG-TERM OUTCOMES of MAP

Outcomes	N (%)	Alc/Sub	Final Dx.
Acute, complete remission	22 (35%)	5 alc	-
Delayed (1year), Complete remission	2 (3%)	1 alc	-
Relapse, 2-4 episodes Complete remission	22 (35%)	3 alc, 6 MA 4 alc/MA, 1 mul	-
Chronic, On medications	17 (27%)	5 alc, 1 MA, 1 glue, 1 mul	Schiz 14 (82%) Alc psy 3 (18%)

LONG-TERM OUTCOMES of MAP

- **Persistence psychosis:**
 - **chronic MAP or Schizophrenia**
 - **Antipsychotics medication**
- **High prevalence of alcohol abuse/dependence**
- **High prevalence of suicidality risk**
- **High number of premature death**

WHAT WE LEARN?

- **History taking and MA testing are important at the first diagnosis for MAP**
- **MAP patients should be followed to monitor the psychosis and antipsychotics medication should be provided as necessary**
- **The alcohol and others mental health problems should be considered**
- **Reuse of amphetamine and drinking alcohol are high risk of relapse psychosis**
- **One outcomes of MAP is persistence psychosis**

FURTHER STUDIES

- **Subgroup study in persistence psychosis**
- **How to differentiated with schizophrenia**
- **Risk factors/ protective factors of persistence psychosis**
- **Neurocognitive study in chronic MA users/ MAP patients**
- **Genetic study**

THANK YOU