Suicide, Impulsivity, and Comorbidity

Alan C. Swann MD
University of Texas Health Science
Center, Houston

Disclosure Statement

Alan C. Swann MD University of Texas Health Science Center, Houston The 8th Annual Guze Symposium on Alcoholism February 21, 2008

Source of research support:

Myriad Pharmaceuticals, Neurochem, Pfizer

Consulting relationships:

Stock equity:

Abbott Laboratories, Astra Zeneca, Cyberonics, Sanofi-Aventis

None

Speaker's Bureaus: Abbott Laboratories, Astra Zeneca,

Eli Lilly, Glaxo Smithkline, Pfizer, Sanofi-

Aventis

Suicide

- Incidence of suicide
 - Greater than homicide
 - 20% of fatal trauma
 - #3 cause of death in 15-24 y/o, #2 in 25-34 y/o
- Severe suicide attempts
 - Increased all-cause, suicide, and homicide mortality during next 5 years, especially next 12 months
- Suicide mortality is increased if history of impulsive aggressive behavior
- Increased in schizophrenia, bipolar disorder, or cluster B personality disorders if substance use disorder is also present: parallel to increased impulsivity

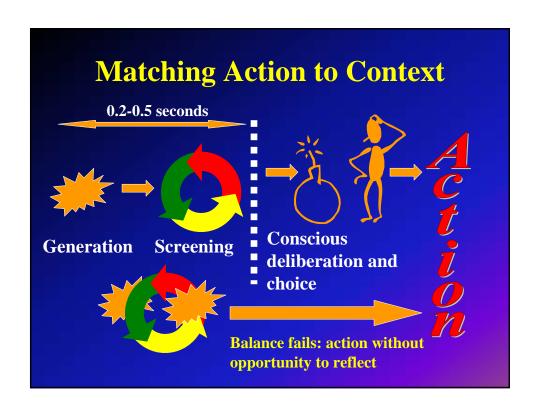
Suicide and the Initiation of Action

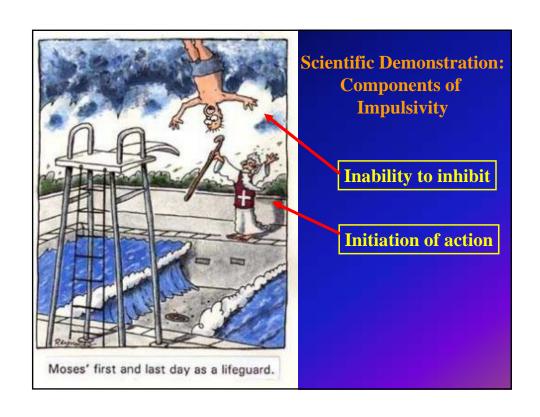
- Impulsivity and the initiation of action
- Clinical states that combine impulsivity and depression: interactions of impulsivity and hopelessness, depression and activation
- Impulsivity and suicide attempts
- How impulsivity and depression can interact
- Clinical conditions predisposing to activated depression
 - Substance use disorders
 - Bipolar disorder
- Treatment considerations

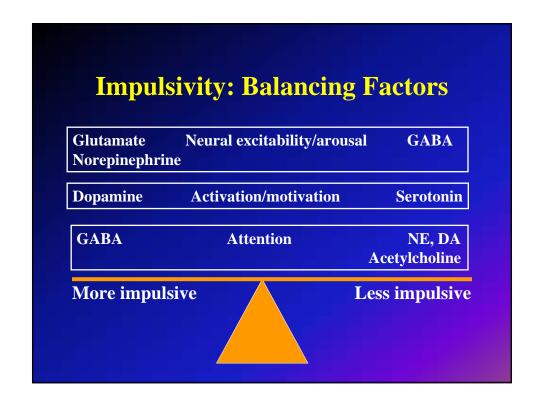
What is Impulsivity?

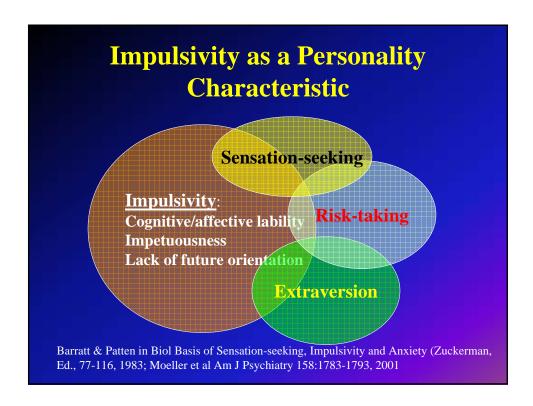
- Inability to conform motivated behavior to its external or internal context
 - Failure of behavioral feedback systems that normally operate outside of consciousness within the initial 0.5 seconds
- No specific behavior is impulsive
 - Any act can be either impulsive or nonimpulsive

Barratt et al 1984; Moeller et al 2001





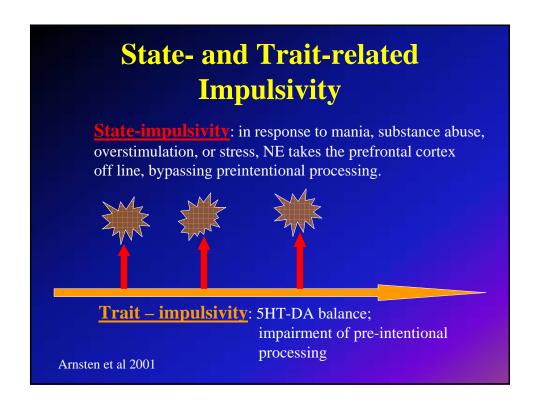


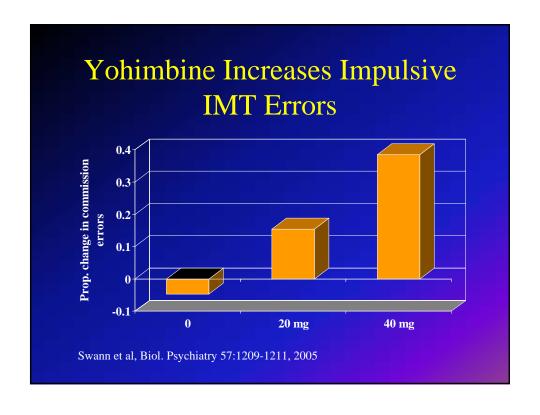


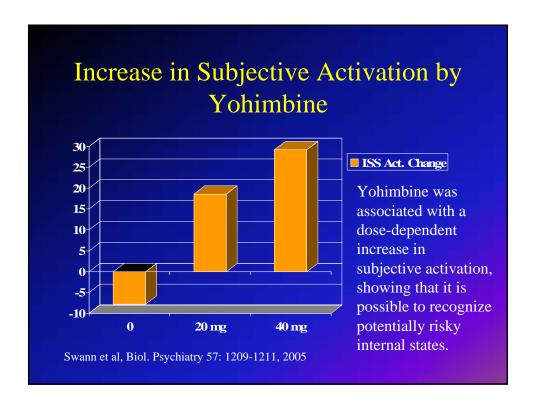
Adaptation to Impulsivity

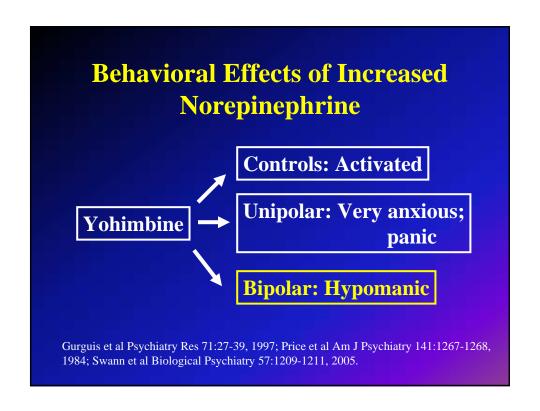
Consequences of living with impulsivity include

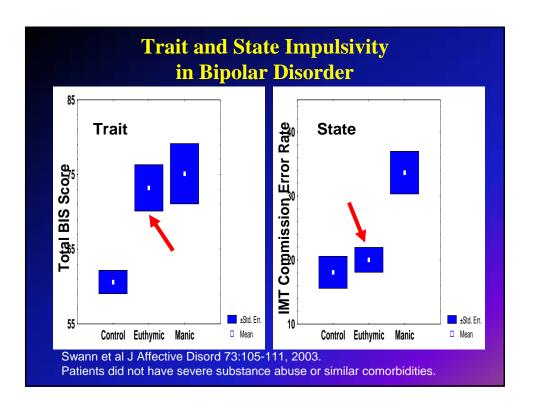
- Attentional: Lack of ability to tolerate cognitive complexity or to apply cognitive effort over time
- Nonplanning: Lack of a sense of behavioral historicity: antecedents or consequences

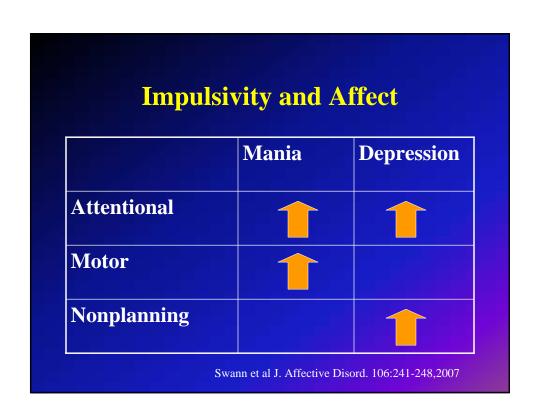










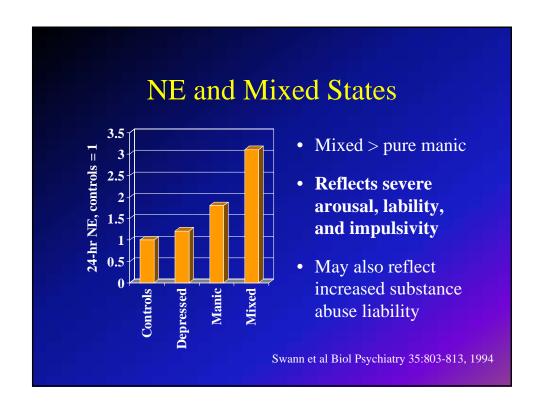


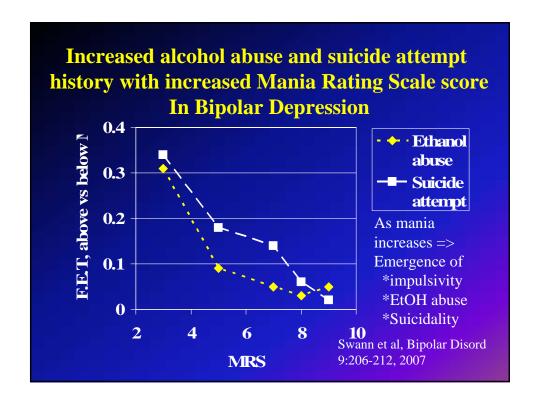
Activated Depression

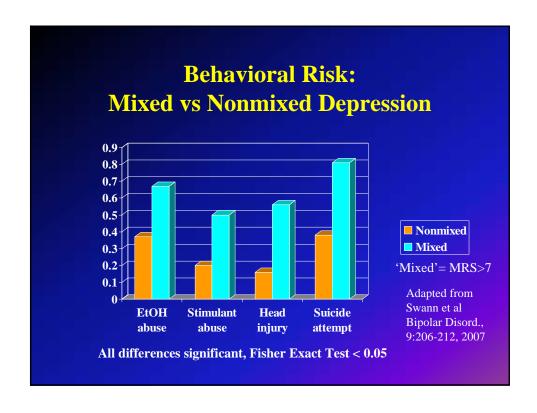
- Natural history of illness
 - Mood lability
 - Mixed states
- Pharmacological
 - Prescribed: antidepressants
 - Self-treatment
 - Substance abuse
 - Intoxication or withdrawal
 - Alcohol, stimulants, nicotine
- Environmental
 - Overstimulation
 - Stress, especially if sensitized by earlier trauma

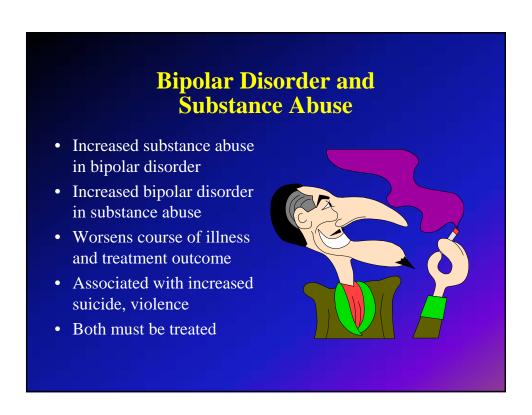
Definitions of Mixed States

- DSM-IV
 - Mixed mania: full mania plus nearly complete depressive syndrome > 7 days
- Real life
 - Mixed depression
 - Depressive syndrome + impulsivity?
- Elements of depressive and manic states can combine in any proportion and can vary over time during an episode.

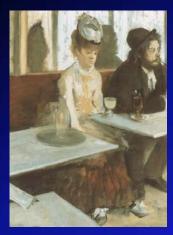








Alcohol and Impulsivity



Biphasic effect on behavior

Ascending limb of BAC: Stimulant Increased impulsivity, catecholamines

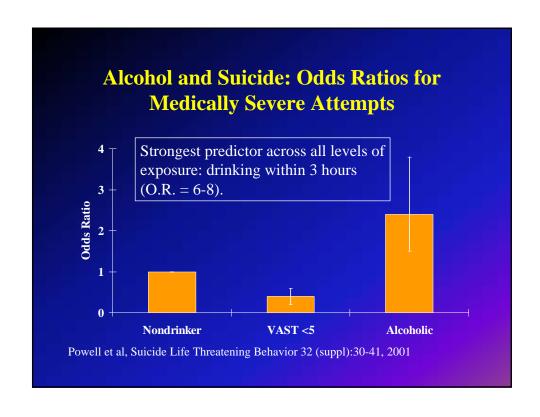
Descending limb: Sedative

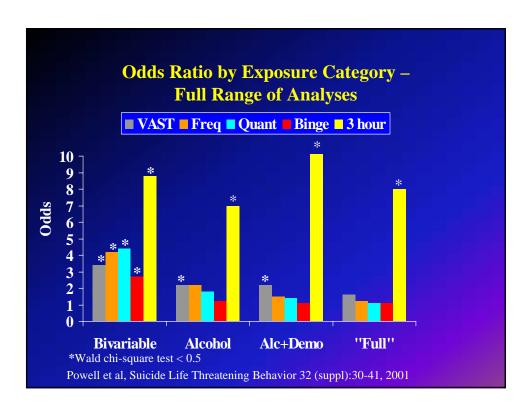
Binge drinking

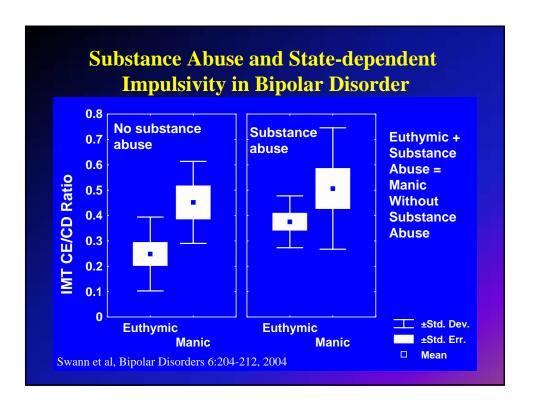
Expression of stimulant effect? Precedes onset of classic dependence Binge drinking without other heavy drinking:

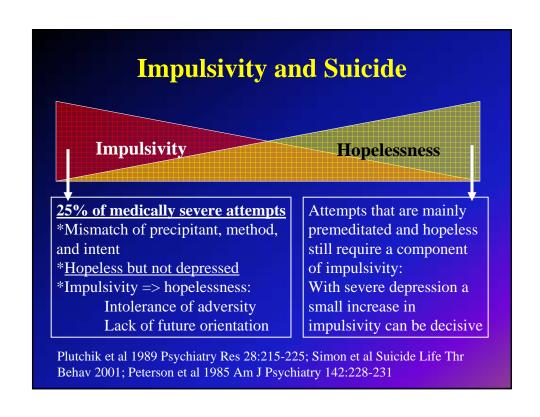
Accidents, fights, suicide attempts

Biphasic Ethanol Effects Ascending BAC Descending BAC Difficulty concentrating Elevated Energized Down Excited Heavy head Inactive Stimulate Talkative • Up Slow thoughts Vigorous Martin et al Alc CEM 17:140-146, 1993









Self-Inflicted Gunshot Wounds

Premeditated

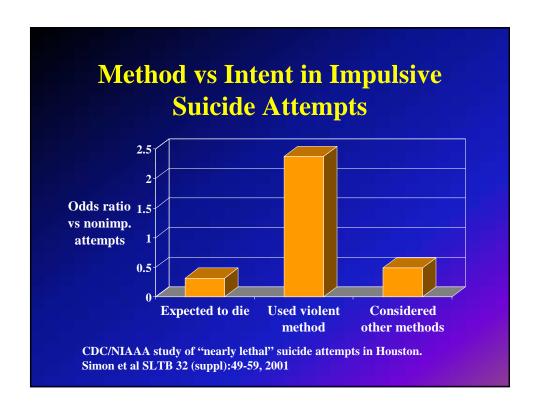
- Clear intent to die
- Angry about rescue
- Planned
- Severe hopelessness

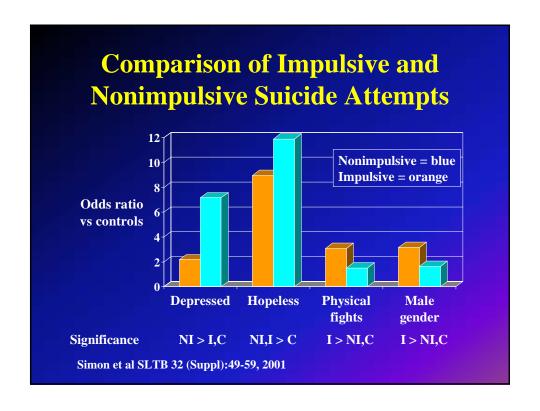
Impulsive

- Apparently trivial precipitant
- No intent or expectation of death
- Bewildered, frightened and relieved

Study of 30 consecutive subjects rescued by helicopter. Ubiquitous binge-like drinking regardless of alcohol-use disorder diagnosis.

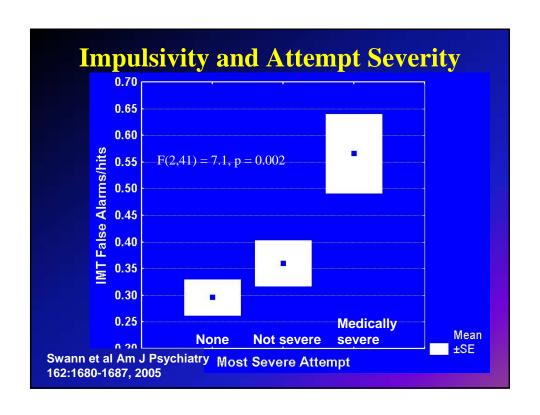
Peterson et al, AJP, 1985

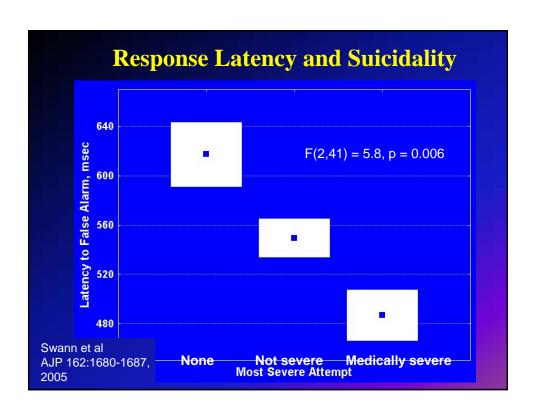




Bipolar Disorder and Suicide

- About 5-10% of individuals with bipolar disorder eventually die by suicide
- Highest incidence is in men, during the first few years of illness
- Increased risk if early onset; substance/EtOH abuse; history of impulsive/aggression
- 89% in depressive or mixed episodes
- Roughly 25% of completed suicides are individuals with bipolar disorder
- Suicide, and mortality in general, decreases in patients treated with lithium, and increases if treatment is stopped.





Impulsivity and Suicide

Self-Inflicted Gunshot Wounds

 Minor precipitant, no intent or expectation of death, deadly method

Case Control Study of Attempted Suicide

- 25% of medically severe suicide attempts
- Lethality of method > lethality of intent
- Impulsive attempters were hopeless but not depressed

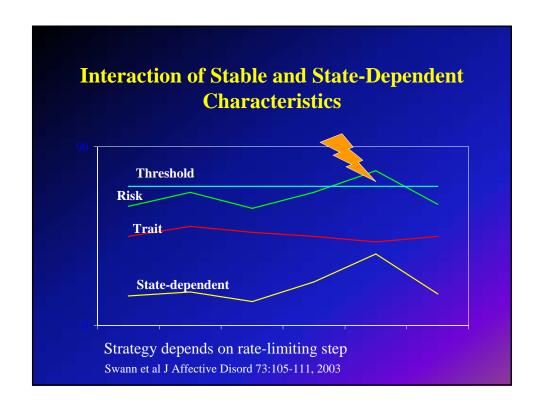
Subjects with bipolar disorder

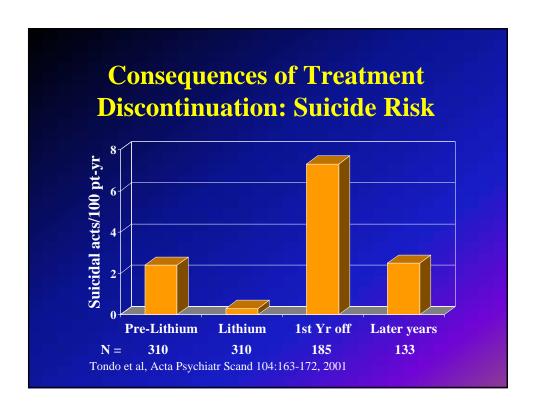
- Increased impulsivity: rapid initiation of action
- Mood lability, ethanol abuse, mixed states

Reducing Suicide Risk

- Use medicines that reduce recurrence and impulsivity
- Work for early recognition of risky internal states and of early signs of recurrence
- Foster a forward-looking approach
 - Social structure and contact
 - Sequential, attainable goals
 - Constructive anticipation of changes and problems
 - Responsibility for health and decisions

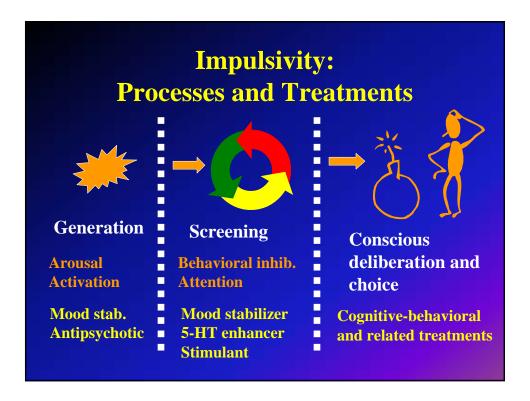
Sachs et al 2001 J Clin Psychiatry 62 Suppl 25:3-11





How (not) to Study Treatment Effects on Suicide

- Retrospective or prospective naturalistic study
 - Patients in groups not comparable
 - Reasons for leaving treatment
- Randomized clinical treatment trials
 - Suicidal patients excluded
- Prospective randomized inclusive study
 - "Intersept" schizophrenia trial



Impulsivity, Comorbidities, and Suicide

- Risk for suicide is increased with the combination of depression/hopelessness and activation/impulsivity
- Affective and substance use disorders, especially when combined, increase this probability
- Treatment requires strategies that combine a focus on the specific disorder(s) present and the general management of problems related to severe impulsivity