

Nurse Practitioners: **MAKING A DIFFERENCE**

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Alcohol and Trauma

An Incident Waiting to Happen

Objectives

- Define the relationship between alcohol and traumatic injury.
- Discuss the impact of alcohol related injury on the healthcare system.
- Overview the implementation of brief interventions in trauma and other health care settings.



Sobriety Test



Effects of Elevated Blood Alcohol Concentration (BAC)

- Altered Cognition and Judgment
- Impaired Motor Coordination
- Greater Likelihood of Injury
- Increased Severity of Injury



Statistical Story

- 77% of fatal MVCs in 1997 involved intoxicated drivers
- 32%-47% of all MVCs involve alcohol
- 33%-39.3% of motorcyclists are drunk
- 31%-49% of struck pedestrians are intoxicated
- 61% of firearm homicides are intoxicated



...and More

- Alcohol is involved in 31% of fire fatalities
- 48% of drownings involve alcohol
- Alcohol plays major role in interpersonal violence
- Alcohol is significant risk factor for sustaining TBI and may impair recovery



Economic Cost of Alcohol Abuse

\$148 Billion Dollars in 1992 and \$185 Billion Dollars in 1998 includes:

- ETOH abuse treatment; prevention efforts
- Associated health care costs
- Reduced productivity: lost earnings
- Other costs to society involving social welfare and crime



...and More

- Mean inpatient charges & physician charges per crash \$18,258 for drinkers; \$14,181 for non-drinkers
- Drinking drivers have longer LOS even when corrected for age, gender, ISS
- National Safety Council predicts 3/10 U.S. residents to be involved in ETOH related MVC



Ask Yourself...

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(How much does an alcoholic patient cost me in time & resources?)



Underage Drinking

- Alcohol present in nearly 1/3 of injured adolescents
- Studies found 20%-30% tested positive for alcohol or other drugs on admission



Alcohol in the Elderly

- Recent admissions to Mercy Medical Center of patients >55 years involved in MVC and falls
- Altered balance and cognition due to age compounded by BAC >200
- Increased mortality in trauma of alcoholics and in elderly: Old drunks often die (ODOD)



Alcohol in the Trauma Bay: Systems Affected: **CNS...**

- 50-150 mg/dl: judgment, inhibitions altered
- 200-300 mg/dl: cerebellar, vestibular functions affected: motor symptoms: slurred speech & ataxic gait
- >300mg/dl: diplopia, stupor, coma. Loss of cough & gag
- Chronic alcohol: peripheral neuropathy



Cardiovascular...

- Mild increases in heart rate
- Decreases in stroke volume by 20-30%
- Twofold increases in left ventricular end-diastolic pressure
- Slows relaxation time. Decreased response to inotropic agents
- Decreased cardiac reserve is detrimental



Respiratory...

- Respiratory depression @ 200mg/dl
- Decreased responsiveness to CO₂
- Slight reduction in vital capacity & expiratory reserve volume
- Respiratory arrest @ 400-500mg/dl
- Some studies show greater risk of posttraumatic ARDS



Gastrointestinal...

- Excess alcohol damages gastric mucosa
- Gastric contents predispose for aspiration
- Alcohol is hepatotoxic and can alter drug absorption, coagulation
- Chronic alcoholics present the most complex challenges



Hematologic...

- Interference with production & function of platelets
- Even normal platelet levels can have impaired function
- Results in coagulopathy associated with acute hemorrhage & impaired homeostasis



Purpose of Prevention

- Emphasis from ACS for Trauma Centers is on Alcohol Prevention
- ENA wants to educate public about dangers of alcohol and its effects
- Goal is to implement alcohol screening and brief intervention in order to reduce risky behavior and chance of injury



Prevention in Your Practice Setting

- How does alcohol abuse impact my practice?
- Is it acceptable to intervene in alcohol abuse if people come to clinic with another problem?



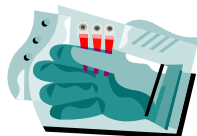
SBIRT...the Plan and Implementation

- SBI: Screening & Brief Intervention
- SBIRT: Screening, Brief Intervention & Referral for Treatment



Trauma Protocol for SBIRT

- All Trauma Alerts have BAC & UDS done
- Trauma Consults seen early with suspicion of alcohol use also tested
- Trauma Clinic used to catch those discharged prior to receiving SBIRT



Challenges in Trauma Center

- Timing of intervention in busy care center
- Analgesia affecting mentation
- Pain affecting comfort to engage in talk
- Discharges prior to SBIRT
- Family/friends @ bedside...privacy
- Readiness of patient to listen when interventionalist ready to talk



Challenges in Your Practice Setting

- Time
- Relating alcohol intervention to visit code
- Denial by patient...no BAC to validate subjective assessment
- Patient relations...if they become angry, embarrassed or defensive, they might choose another provider \$\$\$\$\$



Reason to Persevere?



References

1. Alcohol and Other Drug Problems Among Hospitalized Trauma Patients: Controlling Complications, Mortality, and Trauma Recidivism. Journal of Trauma , 59(3), September, 2005.
2. Screening & Brief Intervention Training for Trauma Care Providers, Christopher Dunn, PhD, March 14, 2008, North Trauma Institute, Minnesota Department of Public Safety.
3. Welsh, et al. Substance Abuse and Trauma Care. Trauma Nursing from Resuscitation Through Rehabilitation, 4th Edition, 2009, 889-922
4. <http://sbirt.samhsa.gov/index.htm> U.S. Department of Health & Human Services, Substance Abuse & Mental Health Services Administration.