

**PEPFAR SOUTHERN & EASTERN AFRICA MEETING ON ALCOHOL  
& HIV PREVENTION**

# **PLWHA, ALCOHOL & ART ADHERENCE**

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**BUILDING A HEALTHY NATION THROUGH RESEARCH**





## OVERVIEW

- **Prevalence of alcohol use in PLWHA**
- **ART adherence defined**
- **Possible mediators of alcohol-ART adherence**
- **Research findings on alcohol-ART adherence**
- **Alcohol & PLWHA: Effect of beverage choice & gender**
- **Alcohol screening/counseling in routine HIV care & treatment**
- **Key take home messages**



## PREVALENCE OF ALCOHOL IN PLWHA

- **Prevalence of alcohol consumption/use in PLWHA is comparable across regions but hazardous drinking levels vary by region:**
  - **North American studies vs. sub-Saharan Africa studies:**
    - **8.9% - 33% vs 2.9% - \*83%**
    - **To contextualize the sub-Saharan Africa prevalence estimates:**
      - **A recent Uganda study (Hahn et al., 2010) amongst ART initiators found approx. 7 % of self-reported alcohol abstainers tested positive using biomarker testing (CDT) for heavy alcohol consumption**
      - **\*Patterns on drinking score (PDS) in most African countries = 3; 4 in South Africa & Zimbabwe (Prof Obot)**
      - **\*Africa has the highest prevalence of heavy episodic drinking amongst 6 WHO regions (Dr Poznyak for Ms Ferreira-Borges)**



## ADHERENCE DEFINED

- **Adherence = extent to which patients carry out the behaviors & treatments as recommended by their practitioners/doctors** (Sarafino, 2005)
  - **Multidimensional construct:**
    - **\*Pill/regimen taking itself** (dosage, schedule, dietary recommendations)
    - Retention
    - Engagement in care (clinic attendance)
  - **Most research studies suggest to attain therapeutic outcomes of HAART requires at least 95% adherence level** (Palella et al., 1998; Paterson et al., 2000)
    - Recent studies indicate high adherence level is probably requisite in protease inhibitor (PI) *monotherapy* regimens
      - **Greater than 95% adherence level may NOT be as vital in NNRTI based regimens or HAART** (Bangsberg, 2006; Bangsberg et al., 2006; Friedland, 2006; Paterson et al., 2000)



## ALCOHOL & ART ADHERENCE: POTENTIAL MEDIATORS

- **Association between substance use and adherence to ART is complex** (Parsons et al., 2005), **possibly mediated by:**
  - **cognition/judgment/short-term memory impairment (*forgetting*)**
  - **beliefs about ART-alcohol interactions (*conscious skipping*)**
  - **depression (hopelessness and pessimism about the future/efficacy of ART)**



## ALCOHOL & ART ADHERENCE: RESEARCH FINDINGS

- **Alcohol use is associated with sub-optimal adherence to ART** (Braithwaite & Bryant, 2010; Braithwaite et al., 2005; Cook et al., 2001; Parry et al., 2010; Shuper et al., 2010)
  - In a review & meta-analysis of North American studies Hendershot et al. (2009) found the relationship between alcohol use and ART nonadherence to be significant and reliable
    - Drinking quantity is a more robust predictor of adherence than drinking frequency
  - Strong temporal and dose-response relationship found between alcohol consumption and poor ART adherence (Braithwaite et al., 2005)



## ALCOHOL & ART ADHERENCE: RESEARCH FINDINGS CONT.

- **Notable paucity of research on the association between alcohol use and adherence to ART in sub-Saharan Africa (SSA) exists, but recent studies have started to fill this gap:**
  - Overall, the majority of SSA studies published to-date point to the negative association between alcohol and ART adherence
    - Jaquet et al., (2010) found a significant positive association between alcohol use and non-adherence to HAART for present drinkers (OR 1.4; 95% CI 1.1–2.0) as well as for hazardous drinkers (OR 4.7; 95% CI 2.6– 8.6).
    - Bhat, et al. (2010) found patients who reported consuming alcohol to be less adherent than those who did not report drinking alcohol
    - Etienne et al. (2010) found alcohol use in the last month negatively affects patients' ART adherence
  - Like some North American studies, no association between alcohol and ART adherence (e.g. Farley et al., 2010; Peltzer et al., 2010) in some SSA studies, while some findings were inconclusive (Van Geertruyden et al., 2010)



## ALCOHOL & ART ADHERENCE: FUTURE DIRECTIONS FOR STUDIES IN SUB-SAHARAN AFRICA

- **Employing standardized/validated measures to ease comparability of studies for meta-analyses and other forms of quantitative synthesis**
- **Given the findings of dose-related effects of alcohol on adherence in the West more studies in SSA ought to integrate drinking quantity into the measures of alcohol use**
- **To address social desirability inherent in self-report of alcohol use and adherence, future studies should employ more \*objective measures**
  - **Medication Event Monitoring System (MEMS), biomarkers for alcohol use (as in Hahn et al, 2010) as well as the use of Computer Assisted Self Interviewing (CASI)**
- **The relationship between alcohol and ART adherence could be moderated by methodological and demographic variables (e.g. gender) as well as how alcohol use and adherence are defined (Hendershot et al., 2009)**
- **More future research which assesses moderators and mediators (e.g. demographic variables, alcohol expectancies and motives) of alcohol & ART adherence**
  - **Findings could then inform intervention targets**



## ALCOHOL & PLWHA: EFFECT OF BEVERAGE CHOICE

- Dissimilar immune responses (to 24-weeks of ART) in beer/wine drinkers and liquor drinkers, **despite similar adherence** and marked decrease in viral loads in both groups; in a cohort study of HAART initiators (Miguez-Burbano et al., 2009):
  - The liquor group had greater odds of having detectable viral loads
  - Cell replenishment was lower in liquor drinkers
    - Overall, CD4s and the thymus size increased in the beer/wine drinker group; thymus size decreased in the liquor group
  - The untoward immune effects associated with liquor were ***not*** affected by hazardous drinking, nor significantly affected by heavy drinking
    - **The negative effects of liquor ought to be attributed to the components of the liquor, not to doses of the liquor**



## ALCOHOL & PLWHA: EFFECT OF BEVERAGE CHOICE & GENDER

- **Regarding gender, differential responses to ART were evident** (Miguez-Burbano et al., 2009):
  - **Women in the liquor group had significantly lower CD4s and naïve cells (marker of immune reconstitution) than men in the liquor group**
  - **Women who consumed non-hazardous amounts of beer/wine had a consistently better immune response than males in the beer/wine group who consumed non-hazardous amounts of beer/wine**
  - **Hazardous female drinkers of liquor exhibited a worse-off immune response than males who consumed liquor in a hazardous and nonhazardous fashion**
    - **The poor immune response evident in women suggests increased susceptibility to thymus damage by liquor in women**



## SCREENING/COUNSELING FOR ALCOHOL USE IN HIV TREATMENT & CARE PROGRAMS

- **Screening and brief intervention (SBI) for alcohol use is a crucial health promotion strategy for HIV patients (Strauss et al., 2009a; 2009b); SBI could have a direct bearing on ART adherence**
- **Health care workers are in a unique position to intervene opportunistically with HIV patients regarding alcohol use, but they do not do so routinely with all HIV patients for various reasons:**
  - **Some providers view alcohol reduction as inconsistent with their roles (Strauss et al., 2009b)**
  - **In patients with less severe HIV infection and those without evidence of liver disease Conigliaro et al. (2003) found providers to be more apt to miss alcohol problems**
  - **Patients are less apt to bring about alcohol in their discussions with health care providers**
    - **Korthuis et al (2008) found of 71% of HIV patients in care, less than 50% have had discussions with their health care providers about substance abuse issues**
    - **In a recent South Africa study, Kekwaletswe et al (unpublished data) found alcohol use to be one of the topics ART recipients do not discuss with their health care providers**
      - » **Health care providers reported a third of their ART patients use alcohol**



## **SCREENING/COUNSELING FOR ALCOHOL USE IN HIV TREATMENT & CARE PROGRAMS CONT.**

- **A South Africa pilot study by Morojele et al (2010) which assessed the extent to which practitioners across various sectors (EAP, HIV treatment and care, substance abuse treatment) address the role of alcohol in HIV, found:**
  - **Though not routinely, respondents from most organisations addressed the issues of alcohol in HIV transmission, disease progression and ART adherence among their clients**
  - **However lack of adequate resources, information and skills impeded these providers' ability to intervene comprehensively**
- **Mackenzie (2007; Kenya) found that VCT counselors do not routinely address the alcohol-HIV link with their clients; half of drinkers and two-thirds of those with partners who drink were missed**



## **SCREENING/COUNSELING FOR ALCOHOL USE IN HIV TREATMENT & CARE PROGRAMS CONT.**

- **In a study of health care providers in the New York City metropolitan area, Strauss et al. (2009) found providers who routinely implemented elements of alcohol SBI had the following attributes:**
  - (1) had a smaller number of patients assigned to them**
  - (2) had greater exposure to information about alcohol's effect on HIV**
    - » **Positive implications of training all providers in the untoward effect of excessive alcohol use in HIV patients**
  - (3) had been in their present positions for at least 1 year**
  - (4) had greater self efficacy to support patients' alcohol reduction efforts**
    - » **Positive implications for further training in SBI for providers**



## **SCREENING/COUNSELING FOR ALCOHOL USE IN HIV TREATMENT & CARE PROGRAMS: GAPS**

- **Studies showing the effectiveness of SBI training for health care providers regarding alcohol use in PLWHA:**
  - Health care providers' ability to address alcohol-HIV links with their patients routinely, as a result of SBI training
  - The extent to which SBI will result in behavior change (alcohol use) in the patients and effect on self-care behaviors such as ART adherence
- **Interventions to increase patient-provider communication regarding substance use**
  - May increase substance abuse treatment utilization, hence a probable positive trickle down effect on ART adherence



## TAKE HOME MESSAGE: SOME KEY POINTS

- **Alcohol impacts a wide array of domains in PLWHA:**
  - Disclosure
  - Treatment initiation
  - Access to treatment
  - **ART adherence**
  - ART outcomes (e.g. viral suppression)
  - Disease progression and survival
- **Health care providers need to routinely assess HIV patients for alcohol use and subsequently intervene**
  - Patients should also be screened for comorbid mental health conditions
    - Integrated or co-located HIV and mental health treatment seems to be ideal in moving towards these targets
- **Development of targeted evidence-based alcohol-related interventions is of high priority**