

ALCOHOL AND IT'S ROLE IN HIV AND OTHER STD TRANSMISSIONS

Behaviour risk

1. Diminished perception of risk , that increases the likely hood that a person would put himself or herself at risk of HIV by engaging in unsafe sexual practices, such as having multiple sex partners, unprotected sex, sex with high risk partners (IDU's and sex workers) and engaging sex for money.

2. Risk of acquiring other sexually transmitted diseases (STD's). Those with STD's are at a risk of both transmitting and acquiring HIV.

3. STD's appear to increase susceptibility to HIV infection in two ways

(A) Ulcerative STD's and

(B) Non –ulcerative STD's.

The ulcerative STD's such as syphilis, herpes or chancroid causes breaks in the genital lining or skin, creating a portal of entry for HIV.

Non-ulcerative STD's such as chlamydia, gonorrhoea and trichomoniasis induce inflammation in the genital tract, thus increasing the concentration of cells in genital secretions that can serve as targets for HIV (example CD 4 + T cells).

4. STD's also appear to increase the risk of an HIV infected person transmitting the virus, as People with HIV who are present with other STD's are shedding more HIV in their genital secretions, than are those who are infected with HIV only.

5.The concentration of HIV in semen is significantly higher in patients co-infected with the Bacteria responsible for gonorrhoea, this makes HIV transmission more easier.

Physiological Effects

1. By increasing viral load replication in HIV infected patients, alcohol may increase the viral concentration in the semen and in vagina, and thus facilitating HIV transmission due to shedding of HIV in patients on HAART.

2. Alcohol may increase immune cell activation and inflammation in the HIV infected patient and thus increase the pool of HIV cells, systematically and at transmission sites.

3. Alcohol may be responsible for changes in vaginal flora , that may induce inflammation and increase the rates of HIV transmission.

4. Level of viral replication, HIV resistant strains and increased levels of immune activation accelerates disease progression.

Alcohols effects on ARV treatment

1. Decreasing patients adherence to treatment can cause drug resistant strains to evolve.
2. Altering liver function and ARV drug metabolism.
3. Accelerating liver disease in hepatitis C and B patients.
4. Increased viral replication may contribute to a poor HAART response. Since the ARV's may not work well.
5. Alcohol drinkers have almost 9 fold increase in medication non-compliance compared with sober patients and the risk of non-compliance correlated with ARV regimen complexity.
6. Many ARV's undergo metabolism in the liver and alcohol can disrupt the bioconversion in HIV patients.
7. Alcoholic HIV infected patients treated with ARV drugs are at risk of drug- drug interactions that may either decrease or inappropriately increase the effect of HAART.
8. Drug-drug interactions increase toxicity and develop liver damage in patients who are already at a risk of developing liver disease because of the direct toxicity of alcohol.
9. Chronic alcohol abuse leads to liver disfunction and loss of liver tissue (cirrhosis), the drugs that normally metabolize by the liver may induce liver toxicity due to impaired conversion. Two ARV's well known to cause liver toxicity are Ritonavir and Nevaripine.
10. Additional risk for alcohol use to complicate HAART is co-infection with viral hepatitis and additional risk factor for scarring of the liver (fibrosis) and cirrhosis.
11. Some ARV drug can interact with alcoholic patients to cause inflammation of the pancreas.
12. There can be neuropathic side effects due to alcohol, causing damage to parts of the nervous system that carry information through the body.
13. Alcohol also increases heart disease risk among patients on HAART.
14. Alcohol may increase viral replication by activating CD4 + T helper cells and impairing The recovery of CD4 + T cells circulating in the body and cells in mucosal sites, example inside the mouth and nose.