

The Medical and Social Consequences of Alcohol Abuse

First of Two Articles

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Introduction

The prevalence of alcohol related illness in the Southern Sudan is unknown, though there is anecdotal information that alcohol related violence, marital discord, absenteeism from work and road traffic accidents which are related to the use of alcohol are common.

Humans have drunk alcohol for at least twelve thousand years. It has been used in religious rituals, in ancient cultures as diverse as Samaria, Babylon, Egypt, China and Anglo-Saxon Britain¹. According to the World Health Organisation (WHO) 1.8 million people worldwide died in 2000 from alcohol related causes, 3% of all deaths worldwide². In 2001, up to 1,000 of 3,479 deaths from suicide and self-inflicted injury were associated with the misuse of alcohol in the United Kingdom³. In the United States of America, each year 85,000 deaths occur along with substantial disability from medical, psychiatric consequences, injuries and "second-hand" effects such as road traffic accidents attributed to the use of alcohol. The estimated annual cost attributable to alcohol use in the United States is equivalent to US\$185 billion⁴.

As peace takes root in the Southern Sudan, so does social life outside a war situation lubricated with a drink or two. Repeated use of alcohol leads to habituation due to induction of liver enzymes, which increase the breakdown of alcohol. Consequently more alcohol is drunk each time in order to produce the same effect.

What is alcohol?

Alcohol or ethanol (C₂H₅OH) is a drug. It is a small water soluble molecule, a proportion of

which is absorbed directly but slowly from the stomach. It is absorbed more rapidly from the small intestine and is freely distributed throughout the body. Absorption of alcohol is quicker if it is drunk on an empty stomach. Sherry with an alcohol concentration of 20% increases blood concentration more rapidly than beer (3 – 8%). Spirits such as whisky and gin (40%) delay gastric emptying and inhibit alcohol absorption. Hence people may still feel drunk the following day after much consumption of whisky or gin. Drinks aerated with carbon dioxide, for example whisky and soda and champagne, are absorbed quicker⁵.

Human factors in alcohol absorption

Alcohol is distributed in water throughout the body, reaching different parts such as the brain, muscles, liver and the bone marrow. Exposure of the liver to alcohol is greatest because blood received from the stomach and intestine reaches the liver through the portal vein, which drains those structures. Relatively little alcohol enters fat tissue due to its poor solubility in fat.

Compared with males, females have relatively higher fat content and hence blood and tissue concentrations of alcohol are higher in females⁵. However other factors may also play a part in making females susceptible to the effects of alcohol.

Medical effects of alcohol

- Disruption of motor coordination such as driving a car or walking in a straight line due to effects of alcohol on the cerebellum, the part of the brain which modulates sensory-motor coordination. This predisposes to road traffic accidents, falls and other injuries.
- **Removal of the voluntary control of behaviour** (self control) and restraint exercised by the body through the prefrontal cortex of the brain. Hence those who have consumed much alcohol may become talkative, seek fights or urinate in public without due regard for the presence of other people¹.

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- Those consuming alcohol may **seek rewards** such as sexual gratification without thinking of the consequences of their actions - such as unplanned pregnancy, or engaging in unprotected sexual intercourse - with the potential result of contracting serious illnesses such as HIV/AIDS.
- **Loss of intellectual abilities** such as memory, judgement, abstract thinking and reasoning. Being uncaring and untidy about one's personal appearance may be the first signs of alcohol abuse particularly in persons in responsible positions.
- Blindness due to optic atrophy if alcohol contaminated with methanol in poor brewing conditions is consumed. Cases of unexplained blindness in some middle class Southern Sudanese who have consumed locally distilled gin regularly have been noted over the years.
- Damage to peripheral nerves manifesting as foot drop, burning sensation in the feet and hands and leading to dropping of objects such as cups held or falls at the slightest tripping.
- **Direct injury to heart muscle** (cardiomyopathy) associated with atrial fibrillation (irregular heartbeat) leading to heart failure and strokes.
- Chronic pancreatitis and ultimately diabetes.
- **Gynaecomastia** (enlarged breasts in men), **atrophy of testicles** and **erectile impotence**. This is believed to be due to the effect of oestrogens whose concentration increases in the body as a result of poor inactivation in the liver which has already been rendered cirrhotic by excessive consumption of alcohol.
- **Foetal alcohol syndrome**: excessive alcohol consumption during pregnancy leads to foetal retardation, central nervous system abnormalities in the foetus such as small openings between the eyelids, thin upper lid, upturned nose, parallel folds on ears and mental retardation leading to impaired learning, slow reaction time and poor problem solving.
- **Dehydration**: alcohol inhibits the release of vasopressin from the posterior pituitary gland leading to increase in urine volume and consequently dehydration. This may lead to kidney failure if not corrected.

Social effects of alcohol

- **Marital disharmony** as a result of cash crisis, domestic violence, loss of job and social exclusion.
- **Violence** leading to homicides, assaults and sometimes burglary.
- **Failure at examinations** for those who are at school, college or university.
- **Loss of trust** by those close to the person abusing alcohol (no-one trusts a drunkard!).

These are some of the major consequences of chronic and excessive alcohol consumption. In the next article I shall be writing about the management of problem drinking to avoid the development of these problems. Drunk in small quantities alcohol may be beneficial.

There are ways round problems in life other than is encapsulated in this quote, "Alcohol is the anaesthesia by which we endure the operation of life" George Barnard Shaw 1856 – 1950.

References

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