A study on comparison of random blood glucose levels in alcoholic and non-alcoholic males of Ernakulam district, Kerala.

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INTRODUCTION

Kerala accounts for the country's highest consumption of alcohol[1] Several studies explained hypoglycemic effect of alcohol use in excessive doses.[2] Krebs and fellows admitted that acute alcohol intake in excessive doses results in hypoglycemia.[3, 4] It was reported that Alcoholics often eat poorly, limiting their supply of essential nutrients and affecting both energy supply and structure maintenance.[5] Furthermore, alcohol interferes with the nutritional process by affecting digestion, storage, utilization, and excretion of nutrients.[6] Alcohol inhibits the breakdown of nutrients into usable molecules by decreasing secretion of digestive enzymes from the pancreas.[7] Alcohol impairs nutrient absorption by damaging the cells lining the stomach and intestines and disabling transport of some nutrients into the blood.[8] As a result, alcohol causes the brain and other body tissue to be deprived of glucose needed for energy and function. Some alcoholics ingest as much as 50 percent of their total daily calories from alcohol, often neglecting important foods.[9, 10] Although alcohol is an energy source, how the body processes and uses the energy from alcohol is more complex than can be explained by a simple calorie conversion value.[11] It was reported that drinkers are no more obese than nondrinkers.[12, 13] Alcohol decreases pancreatic enzyme secretion and interferes with digestion.[14, 15]

To the best of our knowledge studies relating blood glucose level and alcoholism are inadequate in Kerala. Therefore, the present study was undertaken to create awareness among the general population.

METHODS

The present study has been performed at Little Flower Medical Research Centre, Angamaly, and Kerala, India. Two hundred and twenty males and females of Kerala with mean age 41 +/- 21 were enrolled. Alcoholics (drinkers) are included in the present study and their blood glucose levels are compared with the people who never use alcohol. Random blood glucose levels are estimated by using one touch glucometer.

RESULTS

The analysis of data is presented in table no: 1 and figure no: 1. Mean random blood glucose values in Non-alcoholics are higher (102 +/- 33 mg/dl) than in alcoholics is (99 ± 29mg/dl), however it is not statistically significant (p value 0.615). In the present study we have observed slightly higher random blood glucose levels in non-alcoholic males than alcoholic males. However this difference is not statistically significant. We suggest to continue the study with higher sample size to confirm the results and to identify the cause for this difference.

DISCUSSION

Hypoglycemia induced by alcohol was first described by brown and Harvey in 1941. Hypoglycemia is observed in the patients who are chronically addicted to alcohol and have been drinkers of denatured alcohol.[17] Karl A et al reported...
hypoglycemia occurs in ethanol-intoxicated population.[18] However these results are inconsistent as hyperglycemia and keto-acidosis is observed in heavy drinkers.[19] In the present study we have observed slightly higher random blood glucose levels in non-alcoholics than alcoholics. But this difference is not statistically significant. It may be due to low sample size or any other cause. Hence we suggest to continue this study in a larger population to confirm the results and to identify the cause for this difference.

CONCLUSION

In the present study we have observed slightly higher random blood glucose levels in non-alcoholic males than alcoholic males. However this difference is not statistically significant. We suggest to continue the study with higher sample size to confirm the results and to identify the cause for this difference.

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