

Pharma Middle East

November 02-04, 2015 Dubai, UAE

Prevalence of substance abuse and its associated factors among the students of the Rift Valley University College, Bishoftu, East Ethiopia

Eshetu Mulisa and Tadesse Gudeta
Jimma University, Ethiopia

Background: To date, it is very difficult to exclude a single community in the world where substance abuse is not a very serious ongoing public health problem. The college culture of substance abuse will incur a huge financial and health burden on the society.

Objective: Therefore, the main objective of the present study was to assess the prevalence of social drug abuse and its associated factors among the students of the Rift Valley University College at Bishoftu.

Methods: College based cross-sectional study design with quantitative method using students of Bishoftu Rift Valley University College as source population was used.

Results: Of 318 questionnaires to be filled, 290 were complete with a response rate of 91.2%. The most common substances used in the study area were alcohol, cigarette and khat with life time prevalence of 60.7%. The current prevalence of substance use is about 63.1%. According to CAGE-AID parameters (Cut down, Annoyed, Guilty, Eye opener-Adapted to include drug), 22.8% were alcohol abusers, followed by khat (20.7%) and cigarette (18.3%). Most of the students started to use social drugs at college (42.8%) and secondary school level (30.7%). Most of the respondents used social drugs to relax (25.3%), to follow role model (17.5%), influenced by peers (17.1%) and due to availability of substances (13.5%). Upon usage, the majority of the students suffered from health, social and financial problems.

Conclusion: The prevalence of substance abuse is very high affecting future generation. This result necessitates the intervention of substance abuse. Therefore, further investigation and designing of rehabilitation and treatment program is required from concerned bodies. Regular counseling and peer group education can also minimize the substance use practice.

mulisa2e@yahoo.com

Investigating the molecular interactions between novel synthetic retinoids and the ligand-binding domains of retinoic acid receptors

Hesham Hafez^{1,2}, Ehmke Pohl¹, Christopher Redfern² and Andrew Whiting¹

¹Durham University, USA

²Newcastle University, UK

All-Trans Retinoic Acid (ATRA) is widely used to direct differentiation of cultured stem cells and pluripotent Embryonal Carcinoma (ECs) stem cell lines into neuronal cells. EC23 and EC19 are synthetic analogues of Retinoic Acid (RA) differing from each other with respect to the position of the carboxylic acid group. EC23 has been shown to be a more potent inducer of neuronal differentiation than either EC19 or ATRA. In order to investigate the molecular basis of the functional difference, binding assays to RA Receptors (RAR α , β and γ , respectively) and molecular modeling studies were performed. EC50 values for EC23 are generally lower than for EC19 or ATRA on RAR- α and - β , indicating a higher binding affinity and co-activator recruitment. *In silico* molecular docking studies confirmed these differences in binding interactions, and showed that the carboxylic acid group of EC23 in the para-substitution creates the best fit to the ligand binding site with minimal steric hindrance, favoring the downstream binding of transcriptional co-activators. For EC19, the meta-substitution of the carboxylic acid group points away from a favorable interaction with Arg278 (RAR- γ) or create steric clashes with RAR- α / β , resulting in interference with downstream co-activator binding activity. In comparison, ATRA shows similar protein-ligand interactions to EC23, supporting the notion that ATRA and EC23 possess similar molecular activation mechanisms. This study was able to combine chemical structures, receptor binding assay and molecular docking tools to shed light on the reported biological activity of these synthetic retinoids.

h.r.hafez@durham.ac.uk