Changes of Some Blood Count Variables in Alcohol Abuse

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Abstract

Introdh8

Keywords: Alcohol abuse; Complete blood count (CBC); Time of alcohol abuse

Introduction

e use of alcoholic beverages dates from the beginning of civilization in ancient Egypt. As far as we know the rst alcoholic drink was used at least in 6000 BC and people have been drinking alcohol all over the world ever since [1].

e use of alcohol is already a phenomenon of many societies. It is estimated that the total number of the population classi ed as alcohol consumers in the world goes up to 2 billion, while 76.3 million people develop alcohol use disorder [2,3]. e e ects of alcohol depend on the amount of ethanol consumed per kg body weight. Levels from 0:02 to 0:03 g / dl are achieved a er consumption of one or two standard drinks [4]. Complete blood count is one of the most requested blood test from physicians. Alcohol is the most commonly used drug, whose consequences include changes of CBC [5]. Due to the fact, that alcohol use, especially in heavy drinkers, can cause di erent metabolic derangements, it is necessary, to investigate the changes of complete blood count [5]. Another reason that makes CBC necessary to use, is to reveal several damages that alcohol can cause, for example to reveal liver damage [5]. Alcohol consuming can cause di erent adverse e ects on blood cells, therefore even in their functions. e main causes leading to changes of CBC (complete blood count) are: myelosuppression that is accompanying with slight reduction in all blood cells, blood loss from gastrointestinal tract, malnutrition etc [6].

Methods

is is a retrospective cohort study with homogeneity, which was conducted during the period of January 2012- January 2013 in two clinics which treat alcohol use disorders: Center of Addict logy and Clinical Toxicology and the Center of Alcohol Dependence at UHC "Mother Teresa". e data were collected from clinical records of patients admitted over this period in these clinics (Table 1).

As it is shown in Graphic 1 age is presented in the category of 10 years. A total of 39 patients or 11.9 % of the cases were ≤30 years old, a total of 110 cases or 33.5 % of them were 31-40 years old, 93 cases or 28.4 % of them were 41-50 years old, a total of 64 cases or 19.5 % of them were 51-60 years old, 22 patients or 6.7 % of them were ≥61 years old. The results show predominance of the cases in age groups 31-40 years and 41-50 years old, with a statistically significant difference with other age groups (X^2 Goodness of fit = 81.2 p < 0.01).

Age is not subject of normal distribution KS=0.009

Employment status of these patients: As of the employment status shown here, a considerable number of patients in the study were unemployed -157 patients or 47.9 %, 144 or 43.9 % were employed, 15 or 4.6 % of the cases were pensioners, 8 or 2.4 % of cases were disabled and 4 or 1.2 % of the cases were students. The difference is statistically significant (X^2 Goodness of fit = 368 p < 0.01) (Graph 2).

Time of alcohol abuse: The average time of alcohol abuse was 14.9±8.7 years. The shorter time was 1 year and the longest was 45 years. Median was 13 years (Table 3).

As we can see from the Graph 3 the obvious results are as follows:

- There is a weak negative correlation, which is statistically significant between WBC and the time of alcohol consumption. As the time of alcohol consumption increases WBC are lowered. (Rho = -0.17,95% CI = -0.2-0.06, p <0.01)

- There is a weak negative correlation, which is statistically significant between RBC and the time of alcohol consumption. As the time of alcohol consumption increases RBC are lowered. (Rho = -0.24,95% CI = -0.34-0.13, p <0.01)

- There is a weak negative correlation, which is statistically significant between Hgb and the time of alcohol consumption. As the time of alcohol consumption increases Hgb is lowered. (Rho = -0.21,95% CI = -0.31-0.10, p <0.01)

- There is a weak negative correlation, which is statistically significant between HCT and the time of alcohol consumption. As the time of alcohol consumption increases HCT is lowered. (Rho = -0.20,95% CI = -0.30-0.09, p <0.01)

- There is a weak positive correlation, which is statistically significant between MCV, MCH and the time of alcohol consumption. As the time of alcohol consumption increases the level of MCV and MCH increases (Rho = 0.12,95% CI = 0.01 to 0.23, p = 0.02; Rho = 0.11,95% CI = 0.007-0.2, p = 0.03)

- There is a weak negative correlation, which is statistically insignificant between MCHC, RDW and PLT and the time of alcohol consumption (respectively Rho = -0.05,95% CI = -0.15-0.05, p = 0.4; Rho = 0008.95% CI = -0.10-0.11, p = 0.88; Rho = -0.02,95% CI = -0.13-0.08, p = 0.6).

Discussions

Alcohol abuse is a common phenomenon in Albania, especially among men. Till the `00, alcohol abuse among female was very uncommon, but nowdays it is becoming a problem even for female, especially young.

In Albania it was never performed such a study, so till now we didn`t know how alcohol abuse affected blood cells in alcohol abusers. Since, complete blood count is readily available laboratory test, and alcohol affects blood cells, it is very helpful to use this test to better determine and to evaluate problems caused from alcohol abuse. Another