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Abstract:

The purpose of this study was to estimate some biochemical parameters in smoker peoples before and after the treatment with vitamin C. The study carried out in kerbala province from October 2018 to January 2019. Fifty male volunteers participated in this study , the volunteers was smoked twenty cigarrete daily for twenty years. The blood was drawn from smokers before the treatment and after the treatment (two months) with vitamin c. All chemical analysis is measured by medical chemo analyzer instruments. There was a significant increase in Malondialdehyde (MDA), Aspartate aminotransferase(AST), Alanine aminotransferase (ALT), Alkaline phosphatase (ALP), Total Bilirubin, urea and creatinine and in smoking peoples as compared to non smoker groups, at the same time there was significant decrease in superoxide dismutase (SOD),catalase (CAT) activities in smoking groups as compared to control group, however after treatment the smokers with vitamin C the biochemical changes return near to normal values. **We concluded the** Cigar rete has adverse effects on liver and kidney and increase the oxidative stress in humans, vitamin c decrease the oxidative stress in smoker persons due to have the potent antioxidant effect.

Key words: Cigar rete, Oxidative stress, Vitamin C.

1. Introduction:

Smoking is a major and serious health problem that leads to the death of many people because of it [1-3]. Smoking is a major cause of many diseases such as atherosclerosis, cancer and lung diseases [4]. Many studies have been conducted on smoking and found that the tobacco substance contains more than four thousand A chemical, most of which are harmful to the human body, such as nicotine. Smoking plays a prominent and serious role in the formation of stress and the stress of oxidative stress in the course of the development of heart disease.[6-7]

Vitamin C is one of the vitamins dissolved in water and one of its most important functions is the currency as an antioxidant against the fats oxidized in the human serum[8]. The main objective of this trial is to assess the stress of smoking in people who smoke before and after treatment with vitamin C.

2. Subjects and methods:

In this study, 50 male smokers were recruited from male who were selected from Karbala Governorate for the period from 10/2018 to 1/ 2019. The volunteers were asked about age, smoking duration and number of cigarettes smoked per day. About 10 ml of the blood of smokers was withdrawn before treatment with vitamin C. After two months of treatment with vitamin C and a dose of 250 mg, blood was withdrawn from smokers again. The experiment was conducted at Al-Zahraa Teaching Hospital in Karbala. The blood sample was placed in special tubes. Centrifuge for a quarter of an hour. After obtaining the serum, it was placed in the degree of ablution to be used later for biochemical measurements.

2.1. Biochemical analysis:

All biochemical parameters are measured by medical chemo analyzer.

2.2. Statistical Analysis:

Using SPSS Virgin 11.0, statistical analyzes were conducted for all the results and data obtained in this study. They were expressed as a mean± standard deviation .

3. Results:

By looking at the first table, we see a significant decrease in the activities of antioxidants. At the same time, there was an increase in the level of MDA in the group of smokers compared with the non-smokers group. However, after treatment of people who smoked with vitamin C for two successive months, Remarkable in antioxidants activities and a significant reduction in levels of malondialdehyde.

Table 1: Effect of cigarette on MDA levels and antioxidant activities.

Parameters	Control	Cigar rate smoking Before treatment	cigar rate smoking after treatment
MDA(nmol)	71.5 ±9.05 **B**	162.8± 7.55 **A**	80.5± 6.18 **B**
CAT(U/mg)	1.4± 1.62 **B**	0.38± 0.23 **A**	1.31± 0.44 **B**

SOD(U/g)	15.5± 2.55 **B**	4.21± 0.69 **A**	13.46± 1.95 **B**

MDA=Malondialdehyde, SOD =Superoxide dismutase, CAT=Catalase. Data expressed as mean ± SD with different superscripts (a, b, c) differ significantly, P<0.05.

In addition to that, we found a significant increase in the activities of liver enzymes and in the concentration of bilirubin in smokers compared with healthy people, but after giving the smokers vitamin C found a significant decrease in liver function measurements compared to the group of smokers. (Table 2)

Table 2:Effect of cigarette smoking on liver function tests.

Parameters	Control	cigar rete smoking Before treatment	cigarrate smoking after treatment
AST (U/L)	24.01± 7.39 **B**	109.9± 22.98 **A**	29.35± 5.39 **B**
ALT(U/L)	23.21± 6.58 **B**	62.01± 9.91 **A**	27.66± 5.51 **B**
ALP(U/L)	42.6± 8.72 **B**	108.83 ± 17.69 **A**	44.83± 5.90 **B**
TB(mg/dl)	0.91± 0.24 **B**	7.36± 1.61 **A**	1.01± 0.25 **B**

AST=Aspartate amino transferase, ALT=Alanine aminotransferase,ALP=Alkaline phosphatase, TB=Total bilirubin. . The values expresse as mean ± SD with many different superscripts (a, b, c) differ significantly, P<0.05.

As for renal function tests, as shown in Table 3, there was a significant increase in the concentration of urea and creatinine in smokers compared to control group. However, after giving vitamin C, we saw a decrease in urea concentration and creatinine compared to smokers groups.

Table3: The effect of cigarette on kidney function tests.

Parameters	Control	cigarette smoking before treatment	cigarrete smoking after treatment
Urea (mg/dl)	10.53±	25.1±	12.6±

	2.41 **B**	3.37 **A**	2.04 **B**
Creatinine(mg/dl)	0.23± 0.08 **B**	1.38± 0.29 **A**	0.33± 0.22 **B**

4. Discussion:

Smoking is one of the most serious health problems and one of the most important reasons leading to early death, which can be avoided. The risk of the disease increases with the increase in intensity and duration of smoking. The results obtained in this study showed that there is a significant increase in the level of malodialdehyde and a significant decrease in the activities of antioxidant enzymes in smokers compared to non-smokers. However, this increase in the level of melonaldehyde decreases gradually and increases the activities of antioxidants after treatment with vitamin C, the level of malondialdehyde and the activities of antioxidants are almost normal. These results are agree with others (1-4). The term antioxidant refers to any molecule that has the ability to disable or install free radicals before attacking the cells of the body. Man has a sophisticated and highly complex antioxidant system, two types of antioxidant enzyme and non-enzymatic antioxidants, and their work is synergistically, Each other in order to protect cells and protect the body from damage to free fur. Antioxidants may be internal and may be externally obtained as supplements**.(5)**

The most important function of the liver is the separation of harmful substances and not useful for the bloodstream, that is, it works as a filter, but the liver can be reduced to a certain extent to remove toxins and harmful substances, as in the case of large quantities of harmful substances and toxins in the bloodstream, the liver will be unable to Cleaned and removed and thus lead to hepatic toxicity. And that one of the most important evidence of liver failure in the liver is a significant change in some of the activities of enzymes and the most important enzymes, which are significantly higher in the blood stream are Transaminase.(6,7)

In our research, the high levels of liver enzymes and the increase in the concentration of serum bilirubin in smokers is one of the most important indicators of cellular damage and the most important signs of loss of the cellular membrane of occupational safety due to excessive smoking. The continuous treatment of vitamin C returned levels of liver enzymes and the concentration of bilirubin to the near normal level. This is due to the fact that vitamin C is considered a water soluble vitamin and is one of the most powerful antioxidants that work to clean the body of free radicals by curbing movement or inhibition and thus not give it the opportunity to destroy the cell.(8)

A marked increase in urea and creatinin concentration in cigar rete smoking groups as compared to control groups.These increase may be occur due to the dysfunction of kidney due to cigarrete smoking.

In our study, we concluded that smoking increases the level of malondialdehyde and reduces the antioxidants in the serum of smokers. However, after giving vitamin C, they increased the activities of the antioxidants and the significant decrease in the level of malondealdehyde.

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