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Research Article

EVALUATION OF RAMADAN'S IMPACTS ON LIPID PROFILE AND BLOOD SUGAR

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Abstract:

Objective: The objective of this research work is to assess the impact of month of Ramadan on the profile of lipid and sugar of blood in Jinnah Hospital Lahore.

Methodology: This research work carried out on sixty willing healthy adults. This research work was carried out in the month of Ramadan from May to June 2018. Every willing adult was observing fasting for a mean duration of twelve hours in a day. We took the samples of blood from them on very first and last week of holy month Ramadan. The analysis of the level of TC (Total Cholesterol), VLDLc (Very Low Density Lipoprotein Cholesterol), LDLc (Low Density Lipoprotein Cholesterol), HDLc (High Density Lipoprotein Cholesterol), TG (Triglyceride) and sugar of blood carried out.

Results: The low density lipoprotein cholesterol was very less at the end of month of fasting. A decrease in the mean value of total cholesterol was available at the end of Ramadan but this disparity was not much statistical significant. The rise in the values of HDLc, triglyceride, VLDLc & sugar of blood was not much significant.

Conclusion: There is very advantageous impact of the fasting of Ramadan on the low density lipoprotein cholesterol.

KEY WORDS: Cholesterol, Fasting, Impact, Willing, Adult, Methodology, Blood Sugar, Lipoprotein.

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INTRODUCTION:

One of the main pillars of religion Islam is fasting in the month of Ramadan. Muslims give up drinking liquids and food from dawn to the time of sunset in the month of Ramadan, there is no restriction of any special food in the month of Ramadan, they can eat normal allowed food in all the other months of the whole year but in the month of Ramadan they normally full their tables with the diets having high amount of fat. The duration of the time of fasting is twelve to nineteen hours depends on the season in which Ramadan comes as well as the position of the country according to geography.

Leaving the spiritual as well as religious contemplations, this is the matter under discussion that if there are some dangerous impacts of the fasting on the body of human beings. The aim of this research work is to assess the impact of fasting in the month of Ramadan on the profile of lipids & blood sugar on the healthy willing adult participants of the study.

METHODOLOGY:

Total 60 healthy willing male were the part of this research work with an average age of 34.30 ± 8.60 years. This study conducted in the month of Ramadan from May to June of 2018. The mean fasting duration was twelve hours in a day. There was permission to every male participants to eat anything freely from after Iftari to Sahar. Finger sticks were in use for the collection of the samples of blood from the index finger of left hand, from 35 to 60 microliter blood withdrawn from every patient after twelve hours in the

very first and the last week of the holy month of Ramadan. Blood was stored in acholestech capillary tube on low temperature.

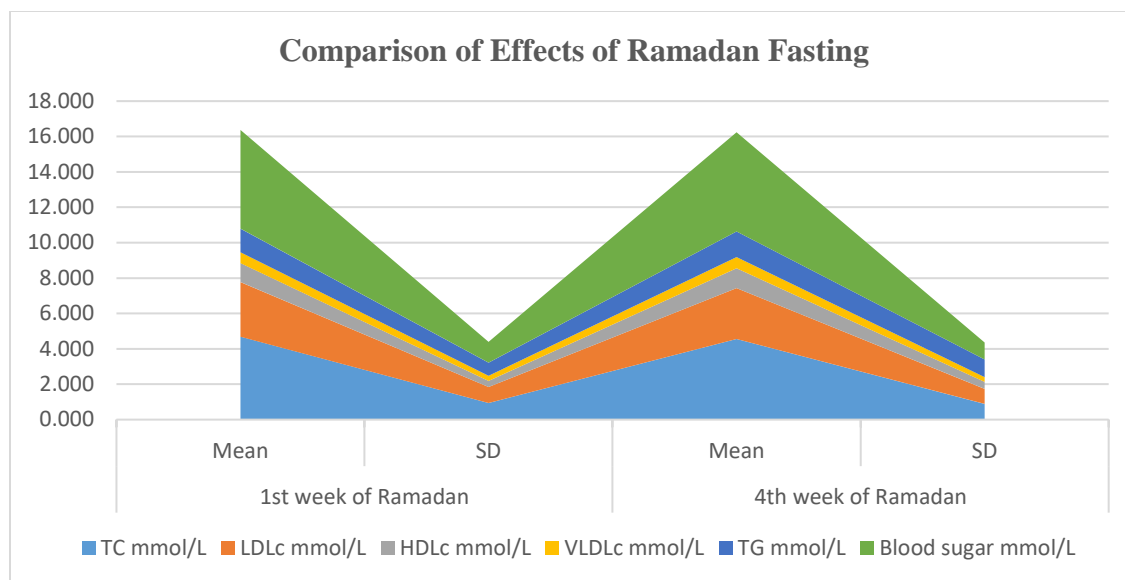
Enzymatic procedure with the utilization of the LDX analyzer was in use for the processing of the total cholesterol, LDLc, VLDLc, HDLc, TG & level of sugar in the blood. The particular analyzer was made up of United States of America. SPSS V. 11 was in use for the statistical analysis of the collected information. Averages \pm SD (Standard Deviation) were in use for the presentation of the quantitative data. Student's T test was in use for comparisons of different values. P value of less than .050 was significant.

RESULTS:

Total sixty healthy willing males were under study to examine the impact of fasting in the month of Ramadan on the profile of lipids and sugar value in blood. The average age of the participants was 34.30 ± 8.60 years. Further examination of the parameters of the blood of the willing participants in the first and fourth week carried out and compared as available in Table-1. We found a significant reduction in LDLc in the end days of fasting in the month of Ramadan. We also observed a decrease in the value of mean total cholesterol in the end of the month of Ramadan but the disparity was not much statistically important. We did not examine any important rise in the values of high density lipoprotein cholesterol, Triglyceride, sugar value in blood & high density lipoprotein cholesterol. ($P < 0.360$, $P < 0.290$, $P < 0.720$, $P < 0.7110$ correspondingly).

Table-I: Comparison of the Effect of Ramadan Fasting on Various Parameters

Variables	1 st week of Ramadan		4 th week of Ramadan		P Value
	Mean	SD	Mean	SD	
TC mmol/L	4.690	0.930	4.560	0.890	<0.160
LDLc mmol/L	3.080	0.910	2.880	0.850	<0.0050
HDLc mmol/L	1.080	0.350	1.110	0.390	<0.360
VLDLc mmol/L	0.610	0.280	0.630	0.270	<0.710
TG mmol/L	1.330	0.750	1.450	0.990	<0.290
Blood sugar mmol/L	5.580	1.170	5.610	0.970	<0.720



DISCUSSION:

There are some regulatory mechanisms in the body of human beings that stimulate in the fasting period. There is very valuable use of the fat and there is decrease of basal metabolism in the period of fasting [2]. In opposition to the famous thoughts, it is evident that the use of a moderate diet with excess of fat around 36.0% of sum energy improved the profile of blood cholesterol [3, 4]. The routine authentic instructions for the use of daily fat is 30.0% or less than this percentage [5]. On the basis of weight, proposed that the use of the fat during the month of Ramadan is very same to the days of other months [6].

Hallak & Nomani examined the impact of hypocaloric diet on males (Eighteen hundred kilo calories per day with 30.0% fat content) and they were unable to found significant impact on the level of total cholesterol [7]. In this current research work, there was an important decrease in the LDLc, this impact was available in the findings of a case study carried out by A Aldouni who also stated the important decrease in LDLc which recovered in complete thirty days after Ramadan [8]. An important decrease in LDLc happened regardless of the fact that propensity to utilize fried diets was much high in the month of Ramadan. The utilization of the high amount of fried diets propose a great use of fat in comparison with the days of other than Ramadan.

The results showed that quantity as well as quantity of the used fat in the month of Ramadan handle the level of blood cholesterol [9]. A Aldouni in a research work proposed that the behavior of feeding during the month of Ramadan impacts the metabolism of serum

Apo lipoprotein & may play their part in the deterrence of various diseases of heart [10]. A Temizhan investigated the association of fasting to the events of coronary events and concluded that total amount of patients with the occurrence of heart diseases was much low in the month of Ramadan as compared to before and after the month of Ramadan [11]. In current case study, we found no important alterations in the level of total cholesterol & HDLc. The was no significant rise in the levels of serum TG & VLDLc, this was due to lipolytic impact of long fasting period, this finding is also consistent with the research work of S. A. Nagra who concluded rise in the level of serum TG in the last days of fasting [12].

There are extensive case studies on fasting for small duration on the metabolism of the carbohydrate [13, 14]. It was also available in one of the finding that a little reduction in the level of glucose in serum from 3.30 to 3.90 mmol happens in ordinary adults after few hours from the start of the fasting. The decrease in the level of glucose in serum stops because of augmented gluconeogenesis in liver. This usually happens due to the reduction in the concentration of insulin & an increase in glucagon as well as sympathetic activity [15]. Some research works have displayed the impact of fasting during Ramadan on the level of serum glucose [16-20]. Azizi and Rasouli examined a little reduction in the level of serum glucose during the initial days of Ramadan followed by regularization on 20th fasting day & again a little increase on 29th fasting day in the month of Ramadan [17]. Other case works have displayed a little rise [18] or variation in the concentration in the level of serum glucose [19, 20] but all the observers fall within physiologic limitations

[17]. In current research work, there was not important increase in the value of blood sugar at the finish of Moth of Ramadan which much similar as observed by various case studies.

CONCLUSION:

There are very considerable impacts of fasting of Ramadan on LDLc which should interpret as an important decrease in the danger of acquiring coronary heart diseases. To put more attention on the pathophysiological alterations of fasting in the month of Ramadan, the suggestion is that there should be a survey internationally with multi centers involvement to evaluate the impacts of disparities in sex, race, dietary habits, pattern of sleep, and other related variables in the month of Ramadan during fasting.

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