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THE RELATIONSHIP OF STEATOSIS WITH THE GRADING OF HISTOPATHOLOGY & LIVER BIOPSIES STAGING IN THE PATIENTS OF HEPATITIS C

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Abstract:
Objective: *The purpose of this research work is to conclude the relationship of steatosis with the grading of histopathology & staging the biopsies of the liver in the patients of the hepatitis C.*
Methodology: *This study was probable research work study grounded on the biopsies of the liver of the patients suffering with hepatitis C. The examination of the stained slides of H & E carried out to find out the activity of histology, score of fibrosis & steatosis.*
Results: *There was a degree of steatosis present in twenty eight patients out of fifty patients. Fourteen patients revealed with no steatosis out of twenty two patients found with the activity of Grade-1. Twelve patients out of thirteen patients with greater steatosis grades had showed the high steatosis grades of score of serious NS (necroinflammatory score). The P value of less than 0.0050 considered as significant.*
Conclusion: *The vital cofactor in the enhancement of in the activity of NS & fibrosis of the patients of patients of hepatitis is steatosis. Steatosis may be an identifier of NI & an identifier of the progression of the fibrosis.*
KEY WORDS: *NI, biopsy, liver, steatosis, identifier, activity, vital, stage, hepatitis.*

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INTRODUCTION:

Steatosis is an extreme gathering of lipid in the cytoplasm of hepatocyte cytoplasm which is the main reason of cirrhosis. Two types of steatosis are available in the patients suffering from the infection of HCV, precisely metabolic steatosis & steatosis induced by HCV. The activation of metabolic steatosis does not carry out due to virus of hepatitis, but blend of that steatosis type & the availability of the HCV has a relationship with very fast fibrosis progression. Though accurate method is not present, steatosis due to HCV is recognizable as the main path for exact cytopathic impact of the virus of HCV [1]. There are many procedures which can be the reason for the association among NI & steatosis. In vitro research works have displayed that the core protein of HCV may be the cause of the oxidative stress. HCV has an association with high creation of cytokines that is the reason of increase of inflammation & high peroxidation of lipid is one of its outcome [2].

Steatosis availability on the biopsy of liver in hepatitis C patients is very common when comparison of this diseases carried out with the other serious diseases of liver as infection HBV & autoimmune hepatitis. Distribution of steatosis available in hepatitis C patients carry out in the regions of periportal rather than the area of centrilobular which is much clearly visible in the disease of fatty liver due to alcohol. This data concludes that the HCV can be the direct cause of the steatosis in such patients in place of merely being an unconnected finding [1]. Khokhar in 2004 working in Rawalpindi discovered that more than sixty percent patients suffering from the infection of HCV had found different steatosis degrees & discovered id to have an association with the high rate of fibrosis progression [3]. The research works about the steatosis and its association with the staging & grading with the help of histopathology in the patients suffering from the infection of HCV are not available. So, this decision happened to conduct this research work on the relationship of steatosis grading & staging of biopsies of liver with the help of histopathology in the patients suffering from the infection of HCV.

METHODOLOGY:

This research work was a probable case study grounded on biopsies of liver of patients of hepatitis C treated at the pathology department at Mayo Hospital Lahore. This research work started in the start of September 2017 & lasted up to the end of July 2018. This research work conducted with the help of radiology department. The patients with infection of HCV were the part of this research work. After the consent of the patients, they underwent biopsies of liver at radiology department with the guidance of ultrasound. Pathology department received these biopsies for assessment through histopathology. The samples with fixed formalin entrenched in paraffin after the processing of tissue. H and E, PAS, Trichrome & Perl's staining carried out after taking the sections. Microscope was in use for the examination of the stained slides. For the histology grading & staging, METAVIRS scheme was in use [4]. The grading of steatosis was as One+ (comprising up to twenty five percent hepatocytes; Two+, 25.0% to 50.0% hepatocytes; Three+, 50.0% to 75.0% hepatocytes & Four+, with more than 75.0% hepatocytes [5]. Following features were available in forms;

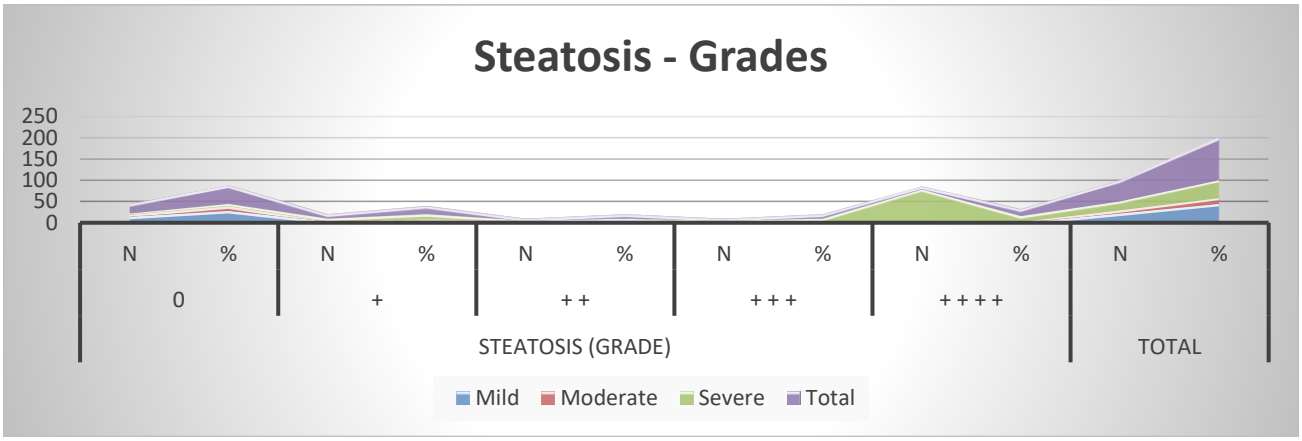
1- Grading & staging of histology conforming to the scores of NI & scores of fibrosis correspondingly.
2- steatosis grades

The application of Chi square method carried out for the distribution of the aspects of histology in accordance with steatosis & their relationship with one another. The value of P less than 0.005 was significant.

RESULTS:

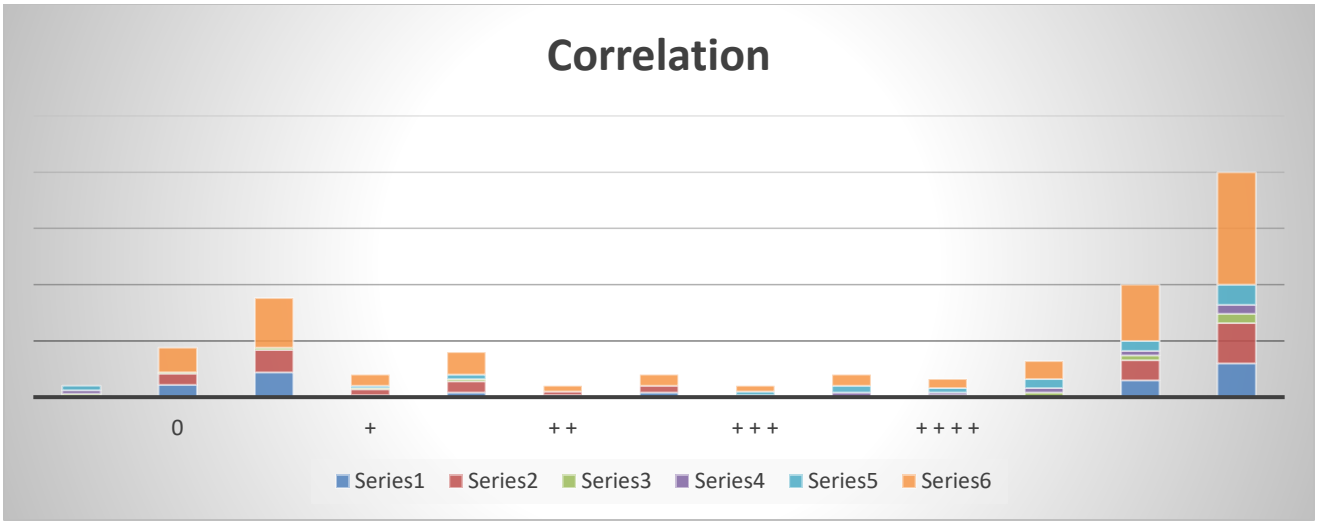
Twenty eight patients out of 28 patients found with some steatosis degree. Forty four percent patients (n22) with the activity of Grade-1 largest amount of the 14 patients found without steatosis. Out of forty two percent (n21) patients with the activity of Grade-3, five patients had steatosis of Grade-3 & seven patients found with steatosis of Grade-4 as described in Table-1.

Table-I: Comparison of necroinflammatory score (grade) with degree of steatosis.												
Grade	Steatosis (grade)										Total	
	0		+		+ +		+ + +		+ + + +			
	n	%	n	%	n	%	n	%	n	%	n	%
Mild	14	28	3	6	5	10	-	-	-	-	22	44
Moderate	5	10	1	2	-	-	-	-	1	2	7	14
Severe	3	6	6	12	-	-	5	10	77	14	21	42
Total	22	44	10	20	5	10	5	10	8	16	50	100



Most of the patients less or without steatosis (Thirty-six percent (n18) & thirty percent (n15) patient correspondingly) found with no steatosis in ten patients & elven patients correspondingly, whereas eighteen percent (n9) cirrhosis patients, four patients found with the highest steatosis grade & three patients found with steatosis of Grade-3 as mentioned in Table-2. No patient with less or without fibrosis found with Grade-3 or Grade-4 steatosis. In the same manner, no patient with serious fibrosis & cirrhosis had not steatosis.

Table-II: Correlation of fibrosis score (stage) with degree of steatosis.												
Grade	Steatosis (grade)										Total	
	0		+		+ +		+ + +		+ + + +			
	n	%	n	%	n	%	n	%	n	%	n	%
0	11	22	2	4	2	4	-	-	-	-	15	30
1	10	20	5	10	3	6	-	-	-	-	18	36
2	1	2	1	2	-	-	-	-	2	4	4	8
3	-	-	-	-	-	-	2	4	2	4	4	8
4	-	-	2	4	-	-	3	6	4	8	9	18
Total	22	44	10	20	5	10	5	10	8	16	50	100



DISCUSSION:

Out of fifty patients, 56% (n28) found with some steatosis degree as described in Table-1. It is very close to the findings of Khokhar [13] who presented steatosis in 61.50% patients. Adinolfi discovered 48.0% patients with [6]. It is clear from this research work that out of twenty two patients without steatosis, most of the patients about 14 showed less scores of NI. Twelve patients out of thirteen patients with greater steatosis grades showed severe scores of NI as elaborated in Table-1. This finding is similar to the results of Adinolfi [6] who discovered that patients with high steatosis grades found with high scores of NI. Our results shows that the vital cofactor in the enhancement of the NI activity in the patients suffering from hepatitis C. Mihm [7] & Rubbia Brandt [8] discovered the pure relationship between the activity of NI & steatosis. A current research work of Zubair A [9] found no relation activity of NI with the steatosis, as they utilized HAI scoring technique for activity grading in place of METAVIRS method which we used in this research work because it is most modern & reliable method as compared to the other systems which can affect the result of the research work.

There is an important relationship between steatosis & fibrosis in this research work. Steatosis with Grade-0 was present in twenty-two patients, eleven patients found without fibrosis whereas ten patients found with less amount of fibrosis as described in Table-2. Eleven patients out thirteen patients with high steatosis grades found with the high fibrosis stage. Adinolfi [6] discovered a relationship among the steatosis grades & fibrosis. He found an average 1.2 fibrosis in the patients without steatosis. He also discovered an average 2.7 fibrosis in the patients having higher grades of steatosis. In the same manner, Mihm [7], Rubbia Brandt [8] & Zubair A [9] found an important relationship among steatosis grading and fibrosis. Genotype-3 HCV has a relation with the viral steatosis, which has a connection with the progression of fibrosis. Fatness has a relationship with the danger of the cirrhosis. In many research works, among the patients suffering from the infection of HCV & alcoholics, fatness was in favor of the fibrosis [2].

CONCLUSION:

The conclusion of this case study showed that the vital cofactor in the enhancement of the activity of the NI of liver & fibrosis in the patients suffering from the infection of HCV is steatosis. So, steatosis may be the identifier of NI & an identifier of the progression of fibrosis.

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