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Research Article

PREVALENCE OF HEPATITIS C IN PATIENTS WITH CHRONIC KIDNEY DISEASE AT A TERTIARY CARE HOSPITAL IN LAHORE

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Abstract:

Background: both hepatitis C and endless kidney infection (CKD) present an uncertain general medical issue. Hepatitis C infection (HCV) is effectively transmittable in hemodialysis units and kidney transplantation. HCV prompts an expansion in mortality and dreariness because of cirrhosis and hepatocellular carcinoma, while it quickens the movement of CKD. The target of the investigation was to depict the statistic, clinical/biochemical profile and commonness of patients with perpetual renal disappointment with HCV contamination.

Techniques: This was a review examination of patients with endless renal disappointment who submitted to the tertiary consideration in Allama Iqbal Medical College Lahore from February 2016 to November 2018 at the Department of Medicine. Point by point clinical information was gathered alongside past reports lab and test. For HCV contamination they were performed in all patients. The determination of HCV was made by HCV RNA (RT PCR) and hostile to HCV positive IgG serology.

Results: We included 67 patients with a mean age of 54 years (run 43-72 years) with a greater part of 76.1% of men and 71.6% in the age bunch 41-60 years. 31.4% were HCV positive, of which 81% were men. It was discovered that 7 patients had co-contamination with HIV and HBsAg. It was discovered that genotype 1 (72%) is more typical than genotype 3. Ultrasonography and endoscopy of the upper gastrointestinal tract indicated 57% individually with the pivot of the spleen expanded and the esophageal varices.

Conclusion:the pervasiveness of HCV contamination in patients with incessant renal disappointment is high, with genotype 1 the most widely recognized. The HCV counter acting agent is negative, in this way recognition with HCV RNA is prescribed. Severe widespread precautionary measures must be utilized in emergency clinics and dialysis units to evade transmission.

Key Words: Chronic kidney disease, Haemodialysis, Hepatitis C, Prevalence

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INTRODUCTION:

As of now, Pakistan has around 10 to 15 million individuals contaminated with hepatitis C infection (HCV), with a pervasiveness of 0.5-1.5% of the population.1 hepatitis C recurrence in patients with endless kidney illness (CKD) in hemodialysis has dependably been discovered more than in the overall public, with reports proposing a commonness of somewhere in the range of 5% and 60% in created nations. there are wide varieties in the commonness of HCV in dialysis units and various nations, as exhibited by the aftereffects of the quest for dialysis and practice reasons (DOPPS). The normal predominance of HCV in the structure was around 13.5%, with varieties somewhere in the range of 2.6% and 22.9% among nations (DOPPS) 5 hazard elements were distinguished as the quantity of blood transfusions, length of CKD, co-contamination with hepatitis B/HIV and past transplantation. There is a solid causal relationship between hepatitis C contamination and glomerular starting point kidney illnesses blended cryoglobulinemia, membranous nephropathy, membranoproliferative glomerulonephritis and polyarthritis nodosa .6,7 what's more, the treatment of these patients with regular treatment remains a noteworthy test because of contrasts accordingly rates contrasted with normales.8.9 people Although there have been numerous examinations on the predominance of HCV in patients with ceaseless kidney ailment in Pakistan, information on these patients stay rare. The reason and motivation behind this examination was to portray the statistic, clinical/biochemical profile of patients and the predominance of CKD patients giving a HCV disease in a tertiary consideration.

METHODS:

This is a review investigation of patients with incessant kidney sickness that happened in the

outpatient office and in the outpatient restorative division, in a tertiary consideration focus in Allama Iqbal Medical College Lahore. Educated assent was gotten from all patients incorporated into the examination. GK limit (GFR) under 60 ml/min/1.73m² (GFR G3a-G5 classification) or tireless proteinuria was set up by a urinary shaft for 3 months or más.10 GFR was determined from the CKD-EPI creatinine condition : $141 \times \min(\text{SCr}/\kappa, 1) \alpha \times \max(\text{SCr}/\kappa, 1) - 1,209 \times 0.993 \text{ Age} (\times 1.018 \text{ On the off chance that it's a lady}) (\times 1.159 \text{ if it's dark})$, where SCr is serum creatinine (in mg/dl), κ is 0.7 for ladies and 0.9 for men, α is - 0.329 for ladies and - 0.411 for men, min is the base of SCr/ κ or 1, and max is the limit of SCr/ κ or 1.10 During the underlying OPD or inpatient visit, medicinal history and point by point physical examination was done, past restorative records and research facility data to get information on the business age of the patient, sex, history of diabetes have been reexamined, hypertension and other potential reasons for CKD, for example, glomerulonephritis. polycystic kidney sickness, and so forth. Tests were completed to identify HCV together with location of HBsAg and HIV to distinguish a corresponding coinfection. At whatever point conceivable, an amount of HCV RNA was likewise acquired by RT-PCR and HCV genotyping. Liver capacity tests (LFT) were just gotten in patients with positive HCV. Complete bilirubin, serum egg whites, AST, ALT, Serum creatinine, platelet tally and INR were gotten. Endoscopy proportions with upper ultrasound and GI have additionally been watched. The analysis of HCV was made utilizing HCV RNA (RT-PCR) and/or positive serum IgG hostile to HCV (third era ELISA) was performed in all patients. Moreover, patients who were against HCV hostile to HCV yet positive (False-negative) were incorporated into the investigation and gathered under HCV positive (see Table 1).

Table 1: Data of patients included in HCV positive group.

Anti HCV	HCV RNA	HCV positive (n=21)
Positive	Positive	Included (19)
Negative	Positive	Included (2)
Positive	Negative ^a	Excluded(5) (under HCV Negative)
Negative	Negative	Excluded (under HCV Negative)

^a HCV RNA negative on two occasions at three months interval in absence of treatment

Patients with HCV negative RNA were pooled in negative VNC, paying little heed to the serological status of HCV. Patients with intense renal disappointment, whose HCV RNA was negative on two events or the individuals who got HCV treatment were avoided from the examination.

STATISTICAL ANALYSIS:

Nonstop parametric factors were accounted for as mean \pm standard deviation and downright factors were communicated as rates. The clear cut factors were looked at utilizing the chi-square test and the Fischer careful test and the nonstop factors were thought about utilizing the Student t test. All dissects

were performed utilizing SPSS 20.0 programming. For all tests, p esteems <0.05 were viewed as huge.

RESULTS:

A sum of 67 patients were incorporated into the examination. The normal age was 54 years with an interim of 43-72 years. The normal age of the patients was 55.32 ± 7.98 (SD) years. The greater part of the patients, 48 (71.6%) were incorporated into the age bunch 41-60 (Table 2). All things considered, 51 (76.1%) were men and 16 (23.9%) were ladies. The most well-known etiology of CKD diabetes was 36/67 (54%), trailed by hypertension 27/67 (41%), while 4% (n = 3) was because of glomerulonephritis. The etiology of the remaining 1% (n = 1) was not indicated or obscure. The normal creatinine of the patients was 5.8 ± 2.67 mg/dl with a scope of 1.8-15.4 mg/dL. All things considered, 45 (67%) had CKD Phase V, 16 (24%) had CKD Stage IV, 4 (6%) had CKD arrange IIIb and 2 (3%) had organize IIIa (KDIGO 2012). Of the 67 patients with ceaseless renal disappointment, 31.4% (n = 21) were HCV positive and 68.6% (n = 46) were HCV negative. Of the individuals who were HCV positive, 81% (n = 17) were men and 19% (n = 4) were ladies. Besides, it was discovered that 7 patients (33.3%) displayed coinfection, 5 with HBV and 2 with HIV. Mean AST was 90.23 ± 105.39 IU/L and ALT was 74.52 ± 85.98 IU/L, mean all out bilirubin was 5.04 ± 4.44 , mean serum egg whites was 3.42 ± 0.78 mg/dl. Moreover, mean serum creatinine in patients with positive HCV was 7.61 ± 3.40 mg/dL (Table 3).

Table 2: Distribution of patients on the basis of age groups

Age Groups	No. of Patients (n=67)	%
41- 50	19	28
51- 60	29	44
61-70	15	22
>70	4	6

Genotyping was performed in all HCV positive patients and genotype 1 was more typical than genotype 3, with 72% (n = 15) of patients with genotype 1 furthermore, 18% (n = 6) with genotype 3. There were 24 hostile to HCV positive, of which 19 were HCV RNA positive, while 5 were HCV negative. 2 were sure for HCV RNA however negative for HCV. In this manner, it was discovered that the affectability and particularity of the counter HCV immune response test were 90.5% and 89.1% individually.

Table 3: Biochemical parameters of HCV positive patients (n=21).

Parameters	Mean (SD)	Range	Unit
Bilirubin	5.04(4.44)	0.8-18	Mg/dl
Albumin	3.42(0.78)	2.1-4.3	Mg/dl
AST	90.23(105.39)	18-416	IU/L
ALT	74.52(85.98)	11-384	IU/L
Creatinine	7.61(3.40)	1.8-15.4	Mg/dl
Platelet count	1.70(1.03)	0.26-3.84	Lac/cu-mm
INR	1.41(0.44)	0.9-2.7	-

Characteristics of patients with and without HCV are compared in Table 4.

An ultrasound was performed in all patients with positive HCV (n = 21), of which 12 (57%) patients had a harsh ecopattern with expanded spleen hub, of which 3 were ladies and 9 were men. Rest 9 (43%) had no mellow hepatomegaly seen in USG. Moreover, 5/12 (42%) had ascites. No hepatocellular carcinoma was recognized in any of the HCV positive patients. UGI endoscopy was performed in all patients with positive HCV and, of the 21, just 12 (57.14%) patients had esophageal varices (grade III and IV) with gateway hypertensive gastropathy. 3 of the 12 patients likewise indicated proof of gastric antral vascular ectasia (GAVE).

Table 4: Comparison of Characteristics of HCV positive and HCV negative patients.

Characteristic	HCV positive N=21	HCV negative N=46	P value
Age	54.6±5.5	55.6±8.7	0.63(NS*)
Male	17 (81%)	34 (74%)	0.758 (NS †)
Female	4 (19%)	12 (26%)	
CKD stage			
IIIa	1 (5%)	1 (2%)	0.272(NS ‡)
IIIb	1 (5%)	3 (6%)	
IV	2 (10%)	14 (31%)	
V	17 (80%)	28 (61%)	
Etiology			
Diabetes Mellitus	11 (52%)	25 (54%)	0.523 (NS ‡)
Hypertension	10 (47%)	17 (37%)	
Glomerulonephritis	0 (0%)	3 (6%)	
Others	0 (0%)	1 (2%)	
Genotype			
1	15 (71%)	-	-
3	6 (29%)	-	-

NS, not significant; CKD, chronic kidney disease, Data expressed as n(%) or mean ±standard deviation; various tests used for statistical significance(p<0.05), *Students t-test; †Fischers exact test; ‡chi- Square test

Table 5: Prevalence of HCV infection in CKD patients in various Indian studies.

Author	Place	Year	Total no. of patients	Patients with HCV infection(%)
Jaiswal SP ¹¹	Indore	1996	105	41.9%
Gosavi ¹²	Mumbai	1997	72	27.8%
Chandra M ¹³	Hyderabad	2004	256	46%
Reddy ¹⁴	Hyderabad	2005	151	13.23%
Medhi ¹⁵	Delhi	2008	250	17.2%
Jasuja ¹⁶	Delhi	2009	119	27.7%

DISCUSSION:

Numerous examinations have been led in Pakistan on the commonness of HCV contamination in patients with unending renal disappointment on hemodialysis 11-16 (Table 5). Every one of these investigations refer to a high pervasiveness (10-40%) which is certified by the commonness of 31.4% in this examination. A considerable lot of these investigations have likewise been done in different nations. In an investigation in Pakistan led by Shafi et al., The recurrence of hepatitis C in patients with ceaseless renal disappointment was 27.2% .¹⁷ In an examination by Fabrizi et al., The immune response against hepatitis C was available in 20% of patients with CKD¹⁸. Fissell et al. discovered that 13.5% is an examination in 7 nations (DOPPS) ⁵. The varieties in the outcomes are likely because of the distinction in the pervasiveness of hepatitis C in different geological areas, in various timeframes of the examinations, varieties in the strategies for

recognition of hepatitis C disease and in the act of contamination control measures in various nations. Moreover, in the Indian setting, the commonness of hepatitis C contamination in patients with incessant kidney illness in our examination is altogether higher than in the all inclusive community (0.5-1.5%). Male predominance was seen in this examination; 81% of HCV positive patients were men practically identical to 69% in another investigation led by Arora et al, which might be related because of the higher occurrence of CKD in itself and in men because of the higher rate of diabetes and hypertension. The most widely recognized age gathering was 41-60 years, as in different investigations, by and by ascribed to the high frequency of CKD in this age gathering.

In this investigation, around 19% of HCV positive patients were ladies, this low number could be because of the presence of clear proof for a higher

HCV end rate in ladies than in men²⁰. Ladies with CKD have a higher danger of quickened infection movement and vascular ailment and harm to the renal target organ than men.

In this investigation, coinfection was seen in 33.3% of patients, in spite of the fact that in certain examinations it is very high (up to half).^{13,22} This is significant in light of the fact that HIV-tainted patients have announced expanded mortality and a more regrettable guess. Along these lines, it is prescribed to screen all patients for coinfection (HIV 1 and 2, HBsAg).^{23,24}

In this examination, most patients with HCV were symptomatic of liver illness, with raised degrees of ALT, AST and serum bilirubin. In this way, screening at ordinary interims (ALT, AST consistently, HCV RNA at regular intervals) is prescribed.

patients with CKD on hemodialysis where the predominance of HCV is very high. The characterized furthest farthest point of ALT (30 and 19 IU/L for people separately) may pick more patients with HCV disease, however may prompt unwanted tests, since the greater part of them don't have HCV²⁵. Moreover, 42% of patients with HCV-positive HCV established that the developed spleen pivot had ascites with indications of entryway hypertension, liver disappointment recommending fast approaching later on with the requirement for liver kidney transplantation rather than a kidney transplant alone, which is added to the patient's heap.

In this investigation, we found that genotype 1 (71%) is more typical among patients than genotype 3, which is commonly the most widely recognized genotype in the Pakistani populace. Our outcomes are like outcomes from different investigations in Pakistan additionally announced that genotype 1 is increasingly regular among patients with incessant renal disappointment, so they are not claros.^{26,27} genotype 2 and different genotypes are uncommon. In this examination, 9.5% had false-negative enemy of HCV antibodies, while HCV RNA was certain in this. We play out the PCR of HCV RNA and against HCV antibodies (ELISA) for all patients. The affectability and explicitness of the counter HCV neutralizer test was observed to be 90.5% and 89.1% separately. Weinstein et al. They revealed an affectability of 94% and an explicitness of 91% of the third-age immunoassay to distinguish positive VHC.²⁸ RNA Assays HCV are characterized into two classifications: protein immunoassay (EIA) and

recombinant compound immunoassay (RIBA). EIA is utilized all the more regularly due to its ease.

HCV contamination has been related with an expanded danger of advancement and movement of CKD, just as decreased unite survival and the patient in patients who in the end experience a kidney transplant^{35,36}. Subsequently, it is of most extreme significance to apply severe all inclusive precautionary measures on dialysis. Medical clinic focuses and rooms where patients with unending renal disappointment are permitted to avert transmission of the disease to different patients and human services experts.

Moreover, it very well may be contended that it could be valuable to contemplate HCV in patients with unending renal disappointment experiencing dialysis for the accompanying: 1) HCV can quicken the movement of CKD to the last phases of renal malady; 2) patients on HCV-contaminated dialysis have a higher danger of mortality than dialysis patients with negative HCV³⁷. Along these lines, the ID and treatment of hepatitis C in patients with endless renal disappointment at a beginning time may improve CKD movement, albeit further investigations are expected to check.

This investigation had a few restrictions.

- This is a review think about on a solitary focus with a constrained example estimate, along these lines explicit hazard factors for hepatitis C contamination can't be found in patients with CKD
- Liver capacity tests were performed distinctly in patients with positive HCV, in this manner it was unrealistic to make examinations between the status of liver capacity in patients with HCV positive and HCV negative. In this way, it was unrealistic to achieve an end in regards to previous liver sicknesses in patients with endless renal disappointment
- Long-term follow-up after treatment and release isn't accessible.

CONCLUSION:

All in all, the predominance of HCV disease in patients with ceaseless renal disappointment is high (31.4%), with genotype 1 (71%) the most common. Thusly, the bogus negative enemy of HCV neutralizer is additionally normal, location with HCV RNA is suggested. Besides, the location of HCV in pre-dialysis patients might be suggested alongside exacting all inclusive safeguards in emergency clinics and dialysis focuses. Further examinations are

expected to check whether the recognizable proof and treatment of hepatitis C in CKD patients will improve mortality.

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