Role of Homoeopathic Medicines in the Patients of Chronic Hepatitis-C

Dr Girish Gupta[1], Dr Dileep Pandey[2]

Abstract

Chronic infection with the Hepatitis C virus is one of the leading causes of global morbidity and mortality.Well-diagnosed thirteen cases of chronic Hepatitis C have been treated with homoeopathic medicines at Gaurang Clinic and Centre for Homoeopathic Research, Lucknow (GCCHR) from December 2008 to October 2016. Out of them, viral load was reduced to below detection limit in three cases (23.08%), considerable reduction in viral load was recorded in six cases (46.15%) and four cases (30.77%) did not respond to treatment.

Introduction

Hepatitis C is an infectious disease caused by single stranded RNA virus called hepatitis C virus (HCV) that primarily affects the liver. [1] It is one of five known hepatitis viruses namely A, B, C, D, and E. [2] It has seven Genotypes and each genotype has different subtypes. [3] During acute infection, patients have mild or no symptoms. Occasionally it presents vague symptoms like fever, weakness, abdominal pain, and jaundice etc. The virus persists in the liver as a chronic infection in about 75% to 85% cases and produce no symptoms. [4] It, however takes many years to develop liver pathology and occasionally cirrhosis. Its late complications include liver failure, liver cancer and GIT hemorrhage due to esophageal and gastric varices. [1]

HCV infection occurs among all ages but the highest incidence of acute hepatitis C is observed in persons aged between 20–40 years.

Background

Chronic infection with the hepatitis C virus is one of the leading causes of global morbidity and mortality. An estimated 130–200 million people worldwide are infected with hepatitis C. [5] About 11 million new cases were recorded in the year 2013. [6] Its incidence is common in Africa and Central and East Asia. About 3,43,000 deaths due to liver cancer and 3,58,000 deaths due to cirrhosis occurred the world over in 2013 due to hepatitis C. [7]

No vaccine capable of preventing HCV infection is available so far. [8] There are certain claims by physicians of alternative systems of medicine having treated cases of Hepatitis C. [9] These are, however, neither scientifically documented nor published in journals with pathological evidence. However, two cases treated by homeopathic medicines have been published by Barbara Sarter et al in march 2012.[10]

Transmission

HCV spreads primarily by blood-to-blood contact by poorly sterilized medical equipment, needle injuries and blood transfusion. [11] It may also spread from an infected mother to her baby during birth [12]and rarely spread by sexual contact. [13]

Diagnosis

Chronic hepatitis C is classified under code B18.2 in 2016 version of ICD-10. The Hepatitis C antibody test

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is used for primary screening. If it is positive, the polymerase chain reaction (PCR) test is preferredfor measuring the amount of HCV RNA in blood called viral load. [14] This test is helpful in assessment of infection status and to monitor response to treatment progress.

Objective

- To explore the role of Homoeopathic medicines in the treatment of HCV infected patients.
- To produce evidence based data of treated patients on modern diagnostic parameters.

Material and method

The study was observational and conducted at Gaurang Clinic and Centre for Homoeopathic Research, Lucknow. The cases were enrolled between the period of December 2008 to October 2016. To assess the status of patient and monitor the response to the treatment, HCV RNA quantitative Polymerase chain reaction (PCR) test was done till patient continued treatment.To screen the status of liver, ultrasonography of hepatobiliary region and Liver Function Test were also done according to the need during the course of treatment.

Viral load more than 5000 IU/ML was the only inclusion criterion for the study. Change in viral load more than this limit was considered for status of treatment. Increase and decrease in viral load more than 5000 was considered as 'Worsened' and 'Improved'. Change within the limit was considered as 'Status quo'.

A total of 15 hepatitis-C patients have been treated with viral load more than 5000 IU/ml, out of which 2 were lost to follow-up. Finally, 13 patients who were on homoeopathic treatment completed the study.

The selection of constitutional medicine was done by repertorising the rubrics obtained from life space investigation guided by totality of presenting signs and symptoms on the basis of 'Principle of Similia,' [15] using complete repertory with the help of Hompath Classic software in every case [16]. Selected constitutional medicine was dispensed in 30C, 200C and 1000C potency according to the need of individual case followed by placebo or some acute medicines as per clinical conditions of the case being treated. A periodic biweekly or monthly follow-up of the cases was done in entire duration of treatment. The repetition of selected medicine/second prescription was based on the response of the patient to the first prescription [17].The treatment duration of patients ranged from3-43 months.

Result

The result of present study suggests the positive role of homoeopathic medicines on inhibition of viral load in patients of Chronic Hepatitis C.

Out of 13 cases, viral load was reduced to below detection limit in three cases (23.08%), considerable reduction in viral load was recorded in six cases (46.15%) and four cases (30.77%) did not respond to treatment.

It was observed that out of 13 patients, 9 (69.2%) patients have shown clinical improvement and 2 (15.4%) were asymptomatic since beginning. However, 2 (15.4%) could not get relief in clinical symptoms.

The age of patients ranged from 7-70 years with median 48.15 yrs. Out of 13 patients, 9 (69.2%) were females and 4 (30.8%) were males.

The details of prescribed medicine are summarized in Table 2 which shows that three medicines were frequently prescribed. These were Lycopodium (46.1%), Arsenic alb (15.4%)and Pulsatilla (15.4%) accounting for 76.9% of the total medicines prescribed.

Table1: Status of Patients (n = 13)

Status	No. of Patients	Percentage
Improved	9	69.20
Not Improved	4	30.80
Total	13	100.00

Table2: Prescribed medicine and their Response (n = 13)

Sl No	Medicine	Number of Patients	Improved	Worsened
1	Lycopodium	6	4	2
2	Arsenic alb	2	1	1
3	Pulsatilla	2	2	0
4	Calc Carb	1	1	0
5	Nux vom	1	0	1
6	Natrum mur	1	1	0
Total		**13**	**9**	**4**

Model case - 1

Mr. M. S (Reg. No: M-04303, HCV No: 8) aged about 50 years, a diagnosed case of Hepatitis- C came to Gaurang Clinic and Centre for Homoeopathic Research, Lucknow for treatment on dated 05/03/2015.

Clinical Finding:
Weight: 70 kg
Investigations:

Liver Function Test (22/03/2015): S. Bil (Total) – 0.97, SGOT – 42, SGPT – 102, S. Alkaline phosphatase–272

Hepatitis C Viral Load PCR (16/02/2015) – 6,809 IU/ml

Genotyping (16/02/2015) – GENOTYPE 3

Ultrasonography (22/03/2015)–Coarse Echotexture of Liver parenchyma with Splenomegaly

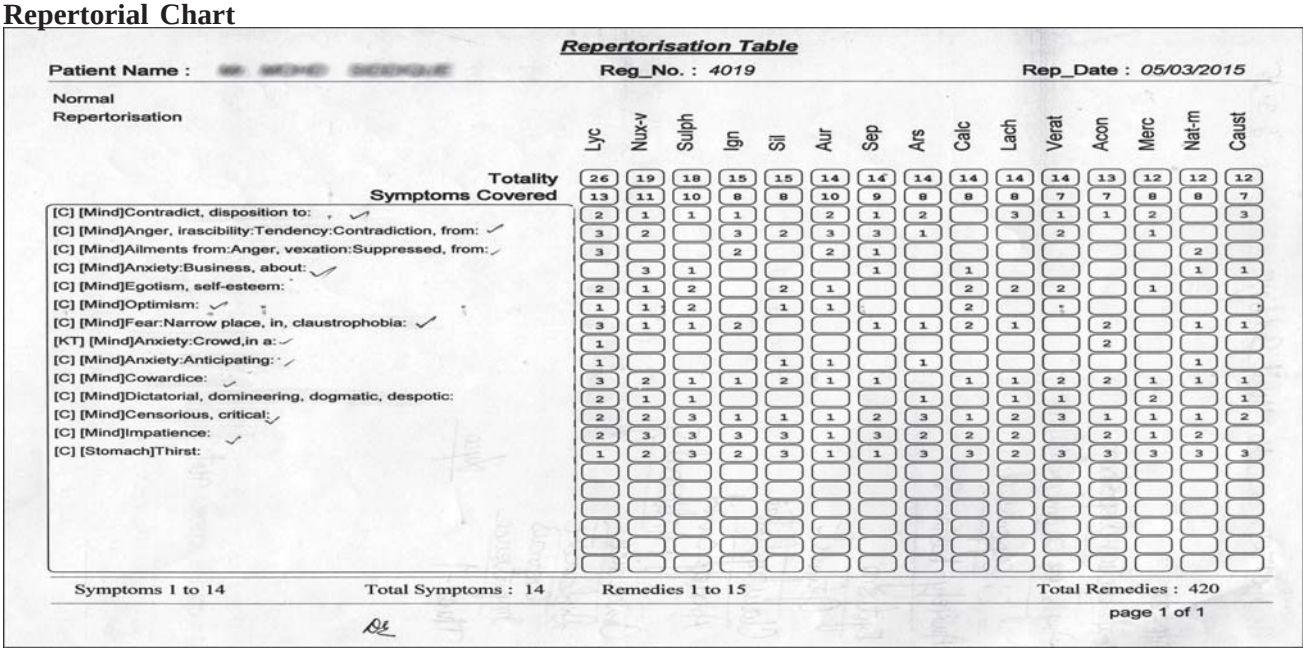
Upper GI Endoscopy (04/02/2015): Grade – 2 Esophageal varices

Presenting Complaints: Diabetic (On Human Insulin),H/o Haematemesis (Binding done for oesophageal varices), Loss of appetite, Weight loss, General weakness.

Following rubrics were selected for repertorisation:

Contradiction – disposition to	Anxiety crowd
Anger- contradiction	Anxiety Anticipation
Aliment from Anger suppressed	Cowardice
Anxiety – business	Dictatorial
Egotism	Censorious
Optimistic	Impatience
Fear of narrow places	Thirst : Increased

Repertorial Chart



Repertorisation Table

Patient Name : [redacted] Reg_No. : 4019 Rep_Date : 05/03/2015

Normal Repertorisation

	Lyc	Nux-v	Sulph	Ign	Sil	Aur	Sep	Ars	Calc	Lach	Verat	Acon	Merc	Nat-m	Caust
Totality	26	19	18	15	15	14	14	14	14	14	14	13	12	12	12
Symptoms Covered	13	11	10	8	8	10	9	8	8	8	7	7	8	8	7
[C] [Mind]Contradict, disposition to: ✓	2	1	1	1		2	1	2		3	1	1	2		3
[C] [Mind]Anger, irascibility:Tendency:Contradiction, from: ✓	3	2		3	2	3	3	1			2		1		
[C] [Mind]Ailments from:Anger, vexation:Suppressed, from: ✓	3			2		2	1							2	
[C] [Mind]Anxiety:Business, about: ✓		3	1				1		1					1	1
[C] [Mind]Egotism, self-esteem:	2	1	2		2	1			2	2	2		1		
[C] [Mind]Optimism: ✓	1	1	2		1	1			2						
[C] [Mind]Fear:Narrow place, in, claustrophobia: ✓	3	1	1	2			1	1	2	1		2		1	1
[KT] [Mind]Anxiety:Crowd,in a: ✓	1											2			
[C] [Mind]Anxiety:Anticipating: ✓	1				1	1		1						1	
[C] [Mind]Cowardice: ✓	3	2	1	1	2	1	1		1	1	2	2	1	1	1
[C] [Mind]Dictatorial, domineering, dogmatic, despotic:	2	1	1					1		1	1		2		1
[C] [Mind]Censorious, critical: ✓	2	2	3	1	1	1	2	3	1	2	3	1	1	1	2
[C] [Mind]Impatience: ✓	2	3	3	3	3	1	3	2	2	2		2	1	2	
[C] [Stomach]Thirst:	1	2	3	2	3	1	1	3	3	2	3	3	3	3	3

Symptoms 1 to 14 Total Symptoms : 14 Remedies 1 to 15 Total Remedies : 420

page 1 of 1

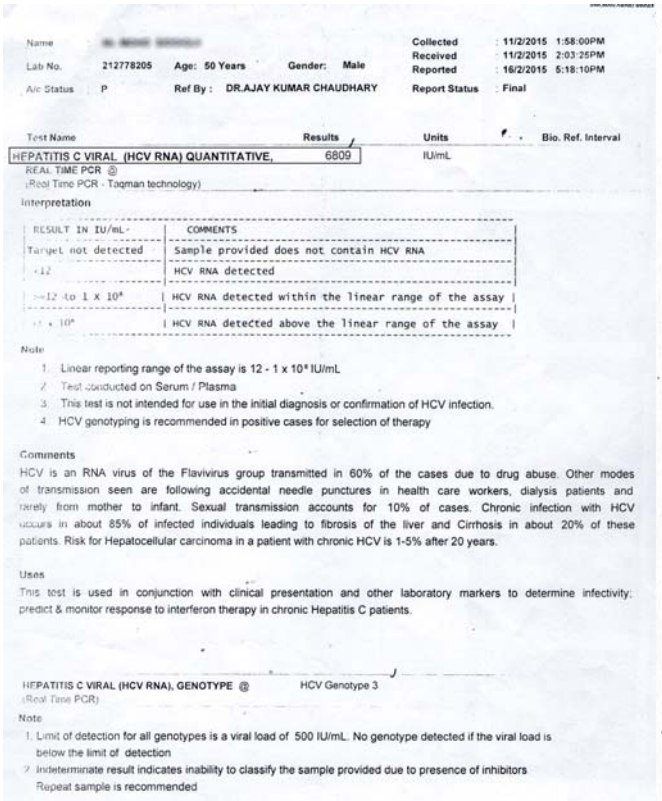
Repertorial Analysis

Medicines	Lyco	Nux vomica	Sulphur	Ign	Sil
Totality	26	19	18	15	15
Symptom coverage	13/14	11/14	10/14	8/14	8/14

Selection of Medicine: Contradiction disposition, Anger on contradiction, Anger suppressed, Dictatorial nature and Anticipatory anxiety favored the Selection of Lycopodium.

Treatment Chronology:

Date	Symptoms/Investigations	Prescription
05/03/2015	Loss of appetite, Weight loss, General weaknessLiver Function Test (22/03/2015): S. Bil (Total) – 0.97, SGOT – 42, SGPT – 102, S. Alkaline phosphatase–272 Hepatitis C Viral Load PCR (16/02/2015) – 6,809 IU/ml	Lycopodium 30 weekly followed by China30 BD for two weeks
23/03/2015	Appetite improved slightly Weakness -better Weight – 70 kg.	Lycopodium 30 weekly followed by China30 BD for two weeks
06/04/2015	Appetite improved Weakness -better Weight – 70 kg. LFT(05/04/2015)- S. Bil (Total) – 0.99, SGOT – 75, SGPT – 61, S. Alkaline phosphatase–239	Lycopodium 30 weekly followed by China30 BD for 8 weeks
09/06/2015	Appetite- poor, weakness↓,Flatulence↓. Weight – 69 kg. O/E- Conjunctiva yellow.LFT (06/06/2015)- S. Bil (Total)–1.30, SGOT –196, SGPT–250, S.Alkaline phosphatase–295	Lycopodium 200 fortnightly followed by China30 BD for four weeks.
	Same treatment was continued till 10/09/2015	
10/09/2015	Appetite- improved, weakness↓, Flatulence↓. Weight – 69 kg. O/E- Conjunctiva yellow. Hb (02/09/2015) – 11gm. LFT (02/09/2015)- S. Bil (Total)–1.40, SGOT –186, SGPT–195, S.Alkaline phosphatase–322	Lycopodium 200 fortnightly followed by China30 BD for two weeks.
23/09/2015	Symptomatically better Hepatitis C Viral Load PCR (10/09/2015) –<33.6 IU/ml (Less than detectable limit)	Lycopodium 200 fortnightly followed by China30 BD for four weeks.
	Same treatment was continued till 13/12/2015	
13/12/2015	Appetite- improved, weakness↓, Flatulence↓. O/E- Conjunctiva normal. Hb (30/11/2015) – 12gm. LFT (30/11/2015)- S. Bil (Total)–0.85, SGOT –146, SGPT–180, S. Alkaline phosphatase–398	Lycopodium 200 fortnightly followed by China30 BD for four weeks.
Treatment Stopped		



Name [redacted] Collected : 11/2/2015 1:58:00PM
Lab No. 212778205 Age: 50 Years Gender: Male Received : 11/2/2015 2:03:25PM
A/c Status P Ref By : DR.AJAY KUMAR CHAUDHARY Reported : 16/2/2015 5:18:10PM
Report Status : Final

Test Name	Results	Units	Bio. Ref. Interval
HEPATITIS C VIRAL (HCV RNA) QUANTITATIVE, REAL TIME PCR @ (Real Time PCR - Taqman technology)	6809	IU/mL	

Interpretation

RESULT IN IU/mL	COMMENTS
Target not detected	Sample provided does not contain HCV RNA
<12	HCV RNA detected
>=12 to 1 x 10⁸	HCV RNA detected within the linear range of the assay
> 1 x 10⁸	HCV RNA detected above the linear range of the assay

Note
1. Linear reporting range of the assay is 12 - 1 x 10⁸ IU/mL
2. Test conducted on Serum / Plasma
3. This test is not intended for use in the initial diagnosis or confirmation of HCV infection.
4. HCV genotyping is recommended in positive cases for selection of therapy

Comments
HCV is an RNA virus of the Flavivirus group transmitted in 60% of the cases due to drug abuse. Other modes of transmission seen are following accidental needle punctures in health care workers, dialysis patients and rarely from mother to infant. Sexual transmission accounts for 10% of cases. Chronic infection with HCV occurs in about 85% of infected individuals leading to fibrosis of the liver and Cirrhosis in about 20% of these patients. Risk for Hepatocellular carcinoma in a patient with chronic HCV is 1-5% after 20 years.

Uses
This test is used in conjunction with clinical presentation and other laboratory markers to determine infectivity; predict & monitor response to interferon therapy in chronic Hepatitis C patients.

HEPATITIS C VIRAL (HCV RNA), GENOTYPE @ (Real Time PCR) HCV Genotype 3

Note
1. Limit of detection for all genotypes is a viral load of 500 IU/mL. No genotype detected if the viral load is below the limit of detection
2. Indeterminate result indicates inability to classify the sample provided due to presence of inhibitors Repeat sample is recommended

Hepatitis C Viral Load PCR (16/02/2015): 6,809 IU/ml

Lucknow Regional

Patient Name : [redacted] RegNo : 0380733
Age and Sex : 50 Years / Male Client Code : PCL-UE-168
Referring Doctor : NA Sample Drawn Date : 10/09/2015 17:45
Referring Customer : E- PATH Registration Date : 12/09/2015 10:56
Sample & Vial ID : Plasma - EDTA - D0224824EDTA/D0224817 Report Date : 13/09/2015 19:40

MOLECULAR BIOLOGY REPORT

HCV RNA Quantitative (Viral Load) PCR

RESULT : Less than 33.6 IU/mL

RESULT : Less than 90.7 Copies/mL

Interpretation:

Result in IU/mL	Remarks
< 33.6 IU/mL	Sample provided does not contain HCV RNA or HCV RNA detected, but below the lower limit
33.6 to 1x 10^6	HCV RNA detected within the linear range of the assay
>1x10^6	HCV RNA detected above the linear range of the assay

Note:
Conversion factor 1 IU/mL = 2.7 Copies / mL
Linear reporting range of this assay is 33.6 to 4x10^6
This test is not intended for use in the initial diagnosis or confirmation of HCV infection

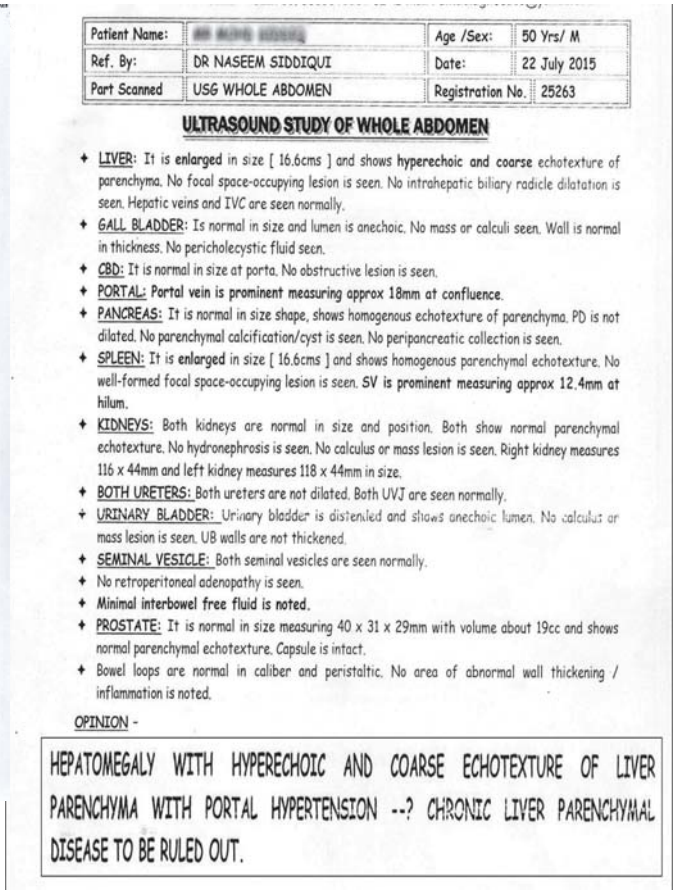
Pathogen Information:
Hepatitis C is a contagious liver disease that results from infection with the hepatitis C virus. It can range in severity from a mild illness lasting a few weeks to a serious, lifelong illness. The hepatitis C virus is usually spread when blood from an infested person enters the body of a susceptible person. It is among the most common viruses that infect the liver.

Technology:
In this assay/test, the presence of HCV-RNA is determined by Real Time PCR. It involves the reverse transcription and specific amplification of a 240 bp region of the HCV genome. This analysis is done on Rotor Gene 6000 by using the highly sensitive and specific TAQMAN assay method. The Taqman probes are used for Fluorescent detection of only target sequence specific amplicons generated during PCR.

Indications:
This test is used in conjunction with clinical presentation and other laboratory markers to determine infectivity, predict & monitor response to interferon therapy in chronic Hepatitis C patients.

Method : Real Time PCR

Hepatitis C Viral Load PCR (10/09/2015)–Less than 33.6 IU/ml (Less then detectable limit)



Patient Name:	[redacted]	Age /Sex:	50 Yrs/ M
Ref. By:	DR NASEEM SIDDIQUI	Date:	22 July 2015
Part Scanned	USG WHOLE ABDOMEN	Registration No.	25263

ULTRASOUND STUDY OF WHOLE ABDOMEN

- LIVER: It is enlarged in size [16.6cms] and shows hyperechoic and coarse echotexture of parenchyma. No focal space-occupying lesion is seen. No intrahepatic biliary radicle dilatation is seen. Hepatic veins and IVC are seen normally.
- GALL BLADDER: Is normal in size and lumen is anechoic. No mass or calculi seen. Wall is normal in thickness. No pericholecystic fluid seen.
- CBD: It is normal in size at porta. No obstructive lesion is seen.
- PORTAL: Portal vein is prominent measuring approx 18mm at confluence.
- PANCREAS: It is normal in size shape, shows homogenous echotexture of parenchyma. PD is not dilated. No parenchymal calcification/cyst is seen. No peripancreatic collection is seen.
- SPLEEN: It is enlarged in size [16.6cms] and shows homogenous parenchymal echotexture. No well-formed focal space-occupying lesion is seen. SV is prominent measuring approx 12.4mm at hilum.
- KIDNEYS: Both kidneys are normal in size and position. Both show normal parenchymal echotexture. No hydronephrosis is seen. No calculus or mass lesion is seen. Right kidney measures 116 x 44mm and left kidney measures 118 x 44mm in size.
- BOTH URETERS: Both ureters are not dilated. Both UVJ are seen normally.
- URINARY BLADDER: Urinary bladder is distended and shows anechoic lumen. No calculus or mass lesion is seen. UB walls are not thickened.
- SEMINAL VESICLE: Both seminal vesicles are seen normally.
- No retroperitoneal adenopathy is seen.
- Minimal interbowel free fluid is noted.
- PROSTATE: It is normal in size measuring 40 x 31 x 29mm with volume about 19cc and shows normal parenchymal echotexture. Capsule is intact.
- Bowel loops are normal in caliber and peristaltic. No area of abnormal wall thickening / inflammation is noted.

OPINION -

HEPATOMEGALY WITH HYPERECHOIC AND COARSE ECHOTEXTURE OF LIVER PARENCHYMA WITH PORTAL HYPERTENSION --? CHRONIC LIVER PARENCHYMAL DISEASE TO BE RULED OUT.

USG (22/03/2015): Coarse Echotexture of Liver parenchyma with Splenomegaly.

Model case-2

Mrs. G. D (Reg. No: G-01313, HCV No:15) aged about 60 years, a diagnosed case of Hepatitis C consulted us on 26 April 2016. The case was taken up in detail:

Clinical Findings:

Blood Pressure —150/80mmHg

Investigations:

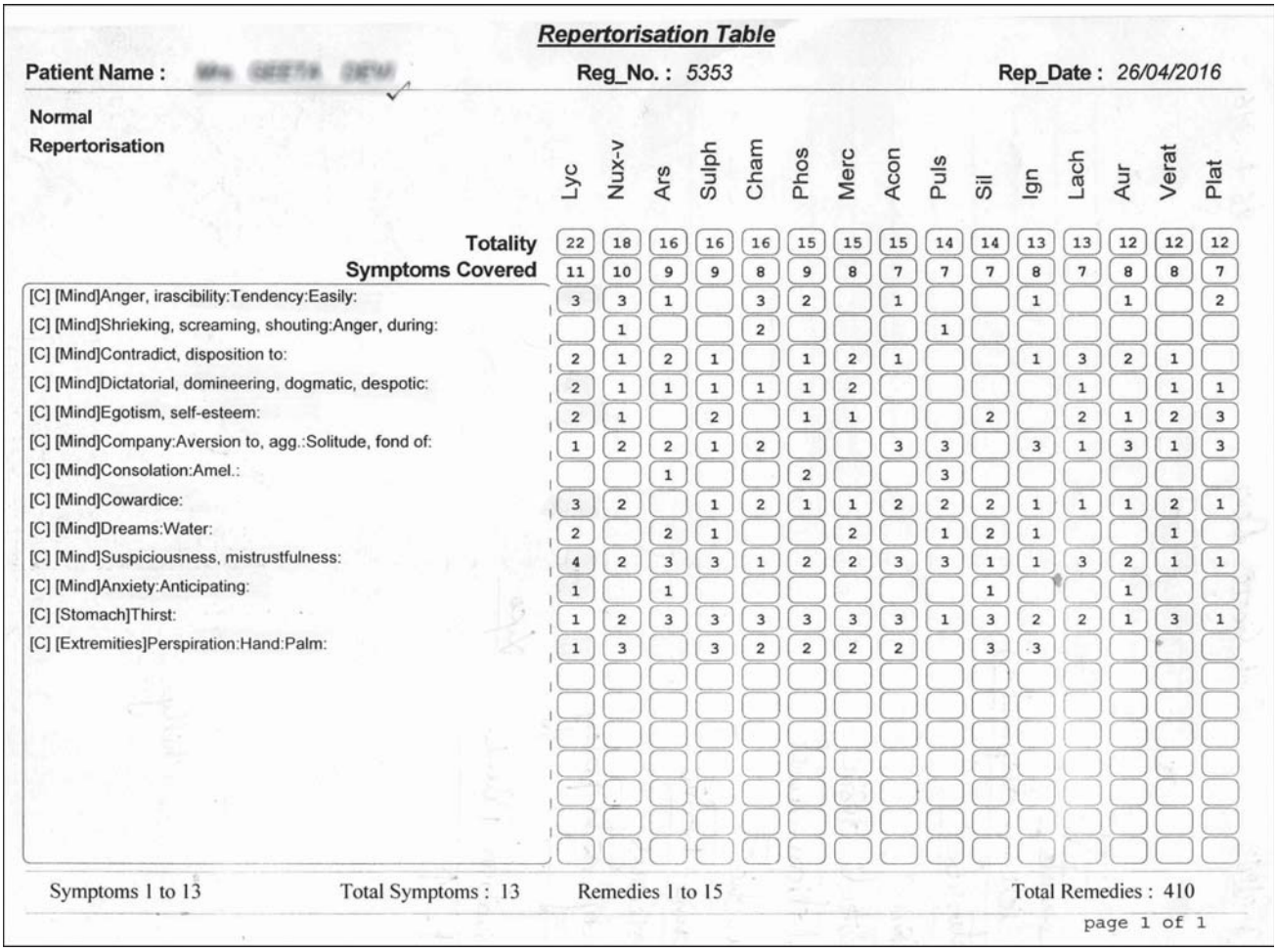
- Liver Function Test (13/04/2016): S. Bil (Total) – 0.6, SGOT – 49, SGPT – 62, S. Alkaline phosphatase–91, Albumin –3.4, Globulin -2.8
- Hepatitis C Viral Load PCR (21/04/2016) – 27,30,000IU/ml
- Genotyping (21/04/2016) – GENOTYPE 3
- Ultrasonography (12/02/2016)– Normal Hepato-biliaryscan

Presenting Complaints: Unsatisfactory defecation, poor appetite and borborygmi

Following rubrics were selected for repertorisation:

Anger- easily	Cowardice
Anger- shouts	Dreams – water
Anger- contradiction	Suspicious
Dictatorial	Anticipatory anxiety
Solitude desire	Perspiration- palm
Consolation amelioration	Thirst increased
Egotism	

Repertorial Chart



Repertorisation Table

Patient Name : [redacted] **Reg_No. :** *5353* **Rep_Date :** *26/04/2016*

Normal Repertorisation

	Lyc	Nux-v	Ars	Sulph	Cham	Phos	Merc	Acon	Puls	Sil	Ign	Lach	Aur	Verat	Plat
Totality	22	18	16	16	16	15	15	15	14	14	13	13	12	12	12
Symptoms Covered	11	10	9	9	8	9	8	7	7	7	8	7	8	8	7
[C] [Mind]Anger, irascibility:Tendency:Easily:	3	3	1		3	2		1			1		1		2
[C] [Mind]Shrieking, screaming, shouting:Anger, during:		1			2				1						
[C] [Mind]Contradict, disposition to:	2	1	2	1		1	2	1			1	3	2	1	
[C] [Mind]Dictatorial, domineering, dogmatic, despotic:	2	1	1	1	1	1	2					1		1	1
[C] [Mind]Egotism, self-esteem:	2	1		2		1	1			2		2	1	2	3
[C] [Mind]Company:Aversion to, agg.:Solitude, fond of:	1	2	2	1	2			3	3		3	1	3	1	3
[C] [Mind]Consolation:Amel.:			1			2			3						
[C] [Mind]Cowardice:	3	2		1	2	1	1	2	2	2	1	1	1	2	1
[C] [Mind]Dreams:Water:	2		2	1			2		1	2	1			1	
[C] [Mind]Suspiciousness, mistrustfulness:	4	2	3	3	1	2	2	3	3	1	1	3	2	1	1
[C] [Mind]Anxiety:Anticipating:	1		1							1			1		
[C] [Stomach]Thirst:	1	2	3	3	3	3	3	3	1	3	2	2	1	3	1
[C] [Extremities]Perspiration:Hand:Palm:	1	3		3	2	2	2	2		3	3				

Symptoms 1 to 13 Total Symptoms : 13 Remedies 1 to 15 Total Remedies : 410

page 1 of 1

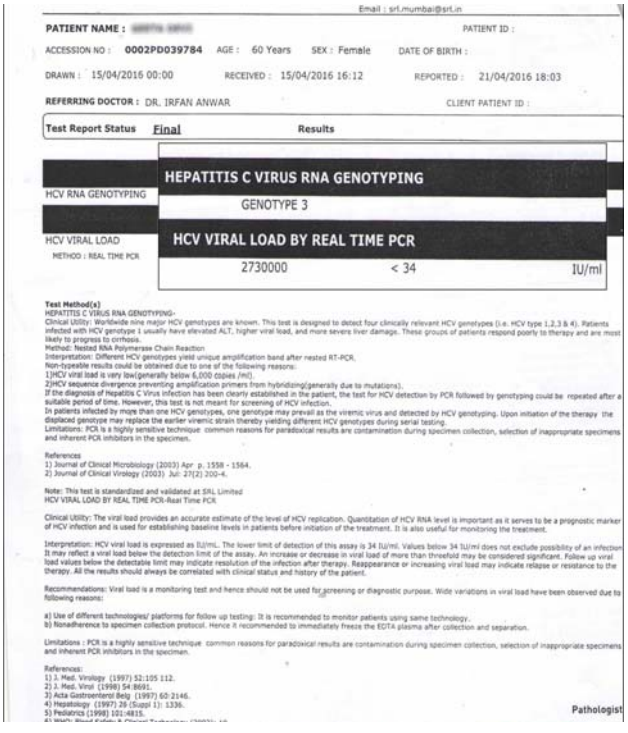
Repertorial Analysis

Medicines	Lyco	Nux vomica	Ars	Sulphur	Chamomilla
Totality	22	18	16	16	16
Symptom coverage	11/13	10/13	9/13	9/13	8/13

Selection of Medicine: Anger on contradiction, Dictatorial nature, Suspiciousness and Anticipatory anxiety favored the Selection of Lycopodium.

Treatment Chronology:

Date	Symptoms/Investigations	Prescription
26/04/2016	Unsatisfactory evacuation of stool, Polydefecation (3-4 times)Appetite – poor with Flatulence Liver Function Test (13/04/2016):S. Bil (Total) – 0.6, SGOT – 49, SGPT – 62, S. Alkaline phosphatase–91, Albumin –3.4, Globulin -2.8 Hepatitis C Viral Load PCR (21/04/2016): 27,30,000IU/ml	Lycopodium 30 weekly followed by China30 BD for two weeks
16/05/2016	Stool normal. Appetite improved.	Lycopodium 30 weekly followed by China30 BD for one month
Same treatment was continued till 21/10/2016		
21/10/2016	Clinically better Hepatitis C Viral Load PCR (13/10/2016) – 8.8 X 10=88 IU/ml. USG (13/10/2016)–Normal Hepato-biliary scanL FT (13/10/2016) S. Bil. (Total)-0.7, SGOT-29,SGPT-35, B. P. – 180/98 mmHg	Lycopodium 30 weekly followed by China30 BD for one month
17/11/2016	Hepatitis C Viral Load PCR (17/11/2016) – below detection limit	Lycopodium 30 weekly followed by China30 BD for one month
Treatment Stopped		



PATIENT NAME : [redacted] PATIENT ID :

ACCESSION NO : 0002PD039784 AGE : 60 Years SEX : Female DATE OF BIRTH :

DRAWN : 15/04/2016 00:00 RECEIVED : 15/04/2016 16:12 REPORTED : 21/04/2016 18:03

REFERRING DOCTOR : DR. IRFAN ANWAR CLIENT PATIENT ID :

Test Report Status Final Results

HCV RNA GENOTYPING	HEPATITIS C VIRUS RNA GENOTYPING		
	GENOTYPE 3		
HCV VIRAL LOAD METHOD : REAL TIME PCR	HCV VIRAL LOAD BY REAL TIME PCR		
	2730000	< 34	IU/ml

Test Method(s)
HEPATITIS C VIRUS RNA GENOTYPING-
Clinical Utility: Worldwide nine major HCV genotypes are known. This test is designed to detect four clinically relevant HCV genotypes (i.e. HCV type 1,2,3 & 4). Patients infected with HCV genotype 1 usually have elevated ALT, higher viral load, and more severe liver damage. These groups of patients respond poorly to therapy and are most likely to progress to cirrhosis.
Method: Nested RNA Polymerase Chain Reaction
Interpretation: Different HCV genotypes yield unique amplification band after nested RT-PCR.
Non-typeable results could be obtained due to one of the following reasons:
1)HCV viral load is very low(generally below 6,000 copies /ml).
2)HCV sequence divergence preventing amplification primers from hybridizing(generally due to mutations).
If the diagnosis of Hepatitis C Virus infection has been clearly established in the patient, the test for HCV detection by PCR followed by genotyping could be repeated after a suitable period of time. However, this test is not meant for screening of HCV infection.
In patients infected by more than one HCV genotypes, one genotype may prevail as the viremic virus and detected by HCV genotyping. Upon initiation of the therapy the displaced genotype may replace the earlier viremic strain thereby yielding different HCV genotypes during serial testing.
Limitations: PCR is a highly sensitive technique common reasons for paradoxical results are contamination during specimen collection, selection of inappropriate specimens and inherent PCR inhibitors in the specimen.

References
1) Journal of Clinical Microbiology (2003) Apr p. 1558 - 1564.
2) Journal of Clinical Virology (2003) Jul: 27(2) 200-4.

Note: This test is standardized and validated at SRL Limited
HCV VIRAL LOAD BY REAL TIME PCR-Real Time PCR

Clinical Utility: The viral load provides an accurate estimate of the level of HCV replication. Quantitation of HCV RNA level is important as it serves to be a prognostic marker of HCV infection and is used for establishing baseline levels in patients before initiation of the treatment. It is also useful for monitoring the treatment.

Interpretation: HCV viral load is expressed as IU/mL. The lower limit of detection of this assay is 34 IU/ml. Values below 34 IU/ml does not exclude possibility of an infection. It may reflect a viral load below the detection limit of the assay. An increase or decrease in viral load of more than threefold may be considered significant. Follow up viral load values below the detectable limit may indicate resolution of the infection after therapy. Reappearance or increasing viral load may indicate relapse or resistance to the therapy. All the results should always be correlated with clinical status and history of the patient.

Recommendations: Viral load is a monitoring test and hence should not be used for screening or diagnostic purpose. Wide variations in viral load have been observed due to following reasons:

a) Use of different technologies/ platforms for follow up testing: It is recommended to monitor patients using same technology.
b) Nonadherence to specimen collection protocol. Hence it recommended to immediately freeze the EDTA plasma after collection and separation.

Limitations : PCR is a highly sensitive technique common reasons for paradoxical results are contamination during specimen collection, selection of inappropriate specimens and inherent PCR inhibitors in the specimen.

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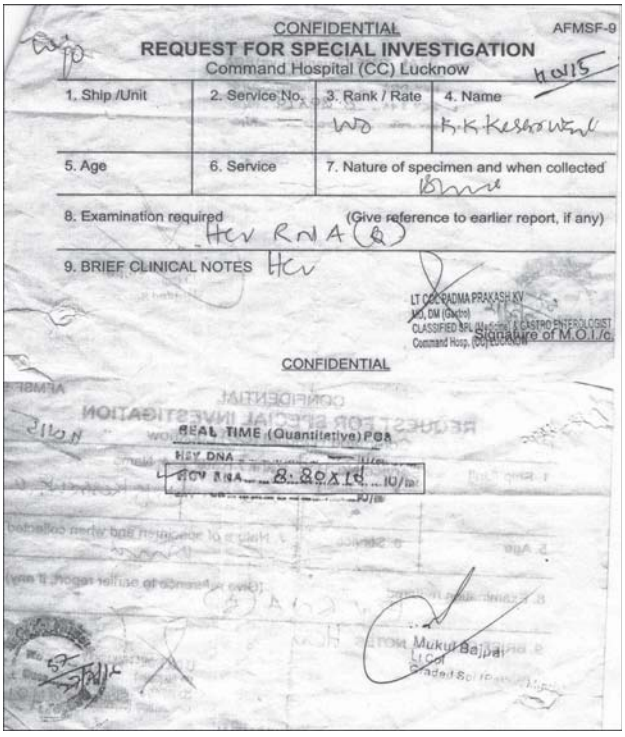
Pathologist

Hepatitis C Viral Load PCR (21/04/2016)– 27,30,000IU/ mlGenotyping (21/04/2016)– GENOTYPE 3



CONFIDENTIAL AFMSF-9

REQUEST FOR SPECIAL INVESTIGATION

Command Hospital (CC) Lucknow

1. Ship /Unit	2. Service No.	3. Rank / Rate	4. Name
		WO	[redacted]
5. Age	6. Service	7. Nature of specimen and when collected	
		[redacted]	

8. Examination required HCV RNA (Q) (Give reference to earlier report, if any)

9. BRIEF CLINICAL NOTES HCV

LT COL PADMA PRAKASH KV
MD, DM (Gastro)
CLASSIFIED SRL (Hepato) GASTRO ENTEROLOGIST
Command Hosp, (CC) Lucknow

Signature of M.O.I/c

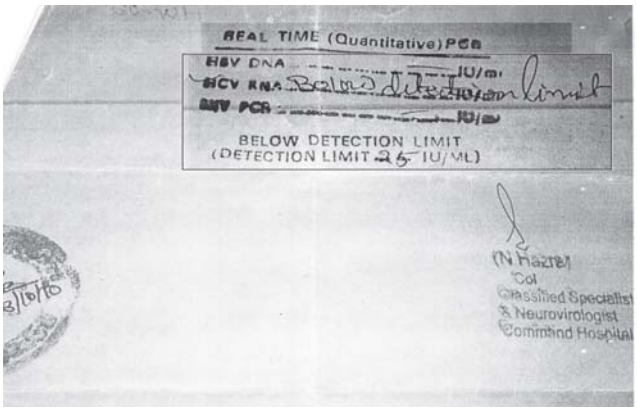
CONFIDENTIAL

REAL TIME (Quantitative) PCR

HCV DNA

HCV RNA 8.80 X 10 IU/ml

Hepatitis C Viral Load PCR (13/10/2016) – 8.8 X 101=88 IU/ml.



Hepatitis C Viral Load PCR (17/11/2016) – below detection limit

Discussion and Conclusion

This observational evidence based study is the first of its kind as no proper published work is available on this topic in homoeopathic journals. The results of this study is eye opening and encouraging.It gives a ray of hope that treatment of such dreadful disease is possible by homoeopathic medicines.

The result also supports the fact that homoeopathic medicines selected on totality of symptoms are useful in inhibition of viral load in patients of chronic hepatitis -c with clinical improvement. The most useful trial medicine in this study was Lycopodium which has been prescribed in 6 (46.1%) cases. Cinchona officinalis was given as hepato-protective everyday which helped the patients.

The currently approved initial therapy for patients with chronic HCV infection consists of treatment with interferon for at least 48 weeks. The rates of sustained virologic response with this regimen are approximately 15 to 20 percent. [18] Interferon therapy has lot of side effects. [19] Homoeopathic medicines, however, have been found to be safe and effective in clearing of Hepatitis- C virus. Randomized control trials with more sample size are needed to further validate the role of homoeopathic medicines in patients of chronic hepatitis –C.

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