HCV Treatment in Primary Care -Case Presentation

SCOTT MILLER PA-C, CHIEF ANDREW ISAAC HEALTH CENTER

50 y/o female seen on 9/12/17 to discuss Tx options for Hepatitis C. She has a Hx of Hepatitis C, genotype 1a, Dx'd in '03. US 2/24/17 revealed mildly enlarged and mildly fatty replaced liver. She has not had prior Tx and has not had a liver Bx. She has a Hx of EtOH dependence. She last drank 2 shots of Vodka on 7/30/17. Denies illicit drug use. She is eager to began Tx and is now devoted to sobriety. She promised her late husband that she would complete Tx. Up until now, she was not ready for Tx because she was grieving her husband's death, since he had been murdered by her son on 5/5/17

Past Medical History

- 1) Chronic Hepatitis C Genotype 1a with Cirrhosis
- 2) Essential hypertension
- 3) Recurrent TIAs, s/p PFO Closure 12-21-11
- 4) Generalized psoriasis
- 5) Rosacea
- 6) Depressive disorder Husband was Murdered by Son on 5-5-17
- 7) Anxiety disorder
- 8) Alcohol dependence
- 9) Tobacco Use Disorder
- 10) Remote Hx of IV Drug Use
- 11) Prediabetes
- 12) Cervical disc disease-Posterolateral Disc Extrusion C5-C6 w/ Foraminal Stenosis
- 13) Allergic rhinitis
- 14) Gout
- 15) Obesity

Medications

- 1) Humira 40mg sc q 2weeks
- 2) Allopurinol 100mg 2 po qd
- 3) Cetirizine 10mg 1 po qd
- 4) Clobetasol ointment bid
- 5) Clopidogrel 75mg 1 po qd
- 6) Duloxetine 60mg 1 po qd
- 8) Hydrocortisone 1% cream apply tid to face as needed to face
- 9) Metronidazole 1% gel apply to face qhs
- 10) Naproxen 500mg 1 po bid
- 11) Pantoprazole 40mg 1 po qd
- 12) Propranolol 10mg 1 po bid
- 13) Triamterene/HCTZ 37.5/25mg 1 po qd

What next??

- Pre-treatment Screening...
- Pre-treatment labs...
- Recommended Treatment...
- Medication Interactions...
- What will be covered by insurance, Medicaid, Medicare, VA?
- What if there is no insurance? How does one enroll into Patient Assistance Programs?
- Monitoring labs...

ANTHC Hepatitis C Treatment

https://anthc.org/what-we-do/clinical-and-researchservices/hep/hep-c-treatment-information/

here. Check back often to stay infor	rmed!	treatments, and other news pertai			
Treatment Tools					
Before Treat	ment	Monitoring During	and After Treatment	l	Treatment Reference Tools
Staging Fibrosis					
Start Here – Staging Fibrosis Algor APRI and FIB-4 Interpretation	rithm				
Start Here – Staging Fibrosis Algor	rithm				
Start Here – Staging Fibrosis Algor		ees (click on Yes o	or No to begin)		
Start Here – Staging Fibrosis Algor APRI and FIB-4 Interpretation	Decision Tre	ees (click on Yes o	o r No to begin) Genotype 4		Genotype 5 or 6
Start Here – Staging Fibrosis Algor APRI and FIB-4 Interpretation Treatment Naïve	Decision Tre	•			Genotype 5 or 6 Cirrhosis?
Start Here – Staging Fibrosis Algor APRI and FIB-4 Interpretation Treatment Naïve I Genotype 1	Decision Tre	Genotype 2 or 3	Genotype 4		51
Start Here – Staging Fibrosis Algor APRI and FIB-4 Interpretation Treatment Naïve I Genotype 1 Cirrhosis?	Decision Tre	Genotype 2 or 3 Cirrhosis?	Genotype 4 Cirrhosis?		Cirrhosis?

Hepatitis C Treatment Checklist

ALASKA NATIVE TRIBAL HEALTH CONSORTIUM

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Hepatitis C Treatment

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Treatment Tools

Before Treatment

Treatment Checklist Health Summary Insurance Screening Patient Readiness Attestation Hep C Information Pre-Treatment Letter Alcohol Use Disorders Identification Test (Audit-C) Patient Health Questionnaire (PHQ-9) Child-Turcotte-Pugh (CTP) Calculator Hep Drug Interactions Monitoring During and After Treatment

Treatment Reference Tools

Hepatitis C Treatment Checklist

Hepatitis C Treatment Checklists

Prior to Treatment Labs: Immediately prior: Pregnancy test (if applicable) Uric Acid (only with ribavirin) Within 1 month: CBC with differential CMP 1 PT/INR HCV RNA Within 3 months: Genotype confirmation _ HBV DNA (if HBV cAb or sAg +) Within 6 months: AFP Within 1 year: HIV screening FibroSure [LabCorp], FibroTest [Quest], FibroSpect [Prometheus], or FibroScan (If any result suggests cirrhosis, calculate Child-Pugh² score) Hepatitis B core antibody IgG (HBcAb) Once: NS5A RAS (Genotype 3 if failed prior treatment or cirrhotic & treating with Epclusa)

Miscellaneous:

- Hepatitis A vaccine status (If unknown: draw HAV antibody total IgG)
- Hepatitis B vaccine status (If unknown: draw HBsAg & HBsAb)
- ____ Review drug-drug interactions
- ____ PHQ-9 baseline
- ___ AUDIT-C
- Counsel about pregnancy prevention
- ____ Review & sign Treatment Readiness Attestation
- ____ Review Information Packet at Treatment Start

Pretreatment Screening Labs

9/27/17

- CBC-WBC-10.89H, RDW-16.9H, MPV-12.2H, Bands-7H, Lymph-21L, Mono-13H, Eos-4H, otherwise WNL
- CMP-Creat-1.19H, Est GFR-48L, K-3.2L, Tot Prot-8.2H, Alb-3.6, Alk Phos-150H, AST-68H, ALT-35, Tbili-0.8, otherwise WNL
- ► HCV Genotype 1a
- HCV RNA Quant 342,000 IU/ml (HCV RNA Log IU 5.53)
- ▶ Hep B virus DNA <20 IU/ml (not detected) (Hep B virus Log <1.30)
- Fibrosure F1-F2 (Minimal Fibrosis)
- ► AFP-4.0
- ► Vitamin D -23L
- ▶ PT-10.4, INR-1.0



► Fibroscan 10/10/17

35.5 kPa consistent with cirrhosis. Fibroscan interpretation - 35.3 kPa with an interquartile range of 7% indicating this is a reliable test equivalent to Metavir F 4 (<u>cirrhosis</u>). CAP score 261 with an interquartile range of 39 (with 70% of scores falling within the S2 to S3 range) so it is likely there is at least a moderate (S2-S3) steatosis.

► US ABDOMEN LIMITED 2/24/17

Impression:

- 1. SPLENECTOMY. A WELL DEFINED ROUNDED STRUCTURE IN THE REGION MOST LIKELY REPRESENTS A SPLENIC LOBULE.
- 2. MILDLY ENLARGED AND MILDLY FATTY REPLACED LIVER. NO FOCAL

LESIONS.

3. NORMAL HEPATOPEDAL FLOW IN THE MAIN PORTAL VEIN.

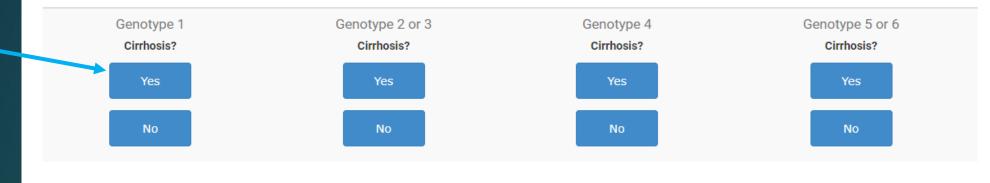
Review

- ► Hepatitis C, genotype 1a, Dx'd in '03.
- Treatment naïve
- ► Fibroscan on 10/10/17 35.3 kPa equivalent to Metavir F 4 (cirrhosis).
- ► AUDIT-C
 - Score of 6 (positive for identifying hazardous drinking or active alcohol use disorders)
- ► PHQ 9
 - Score of 11 (moderate depression)

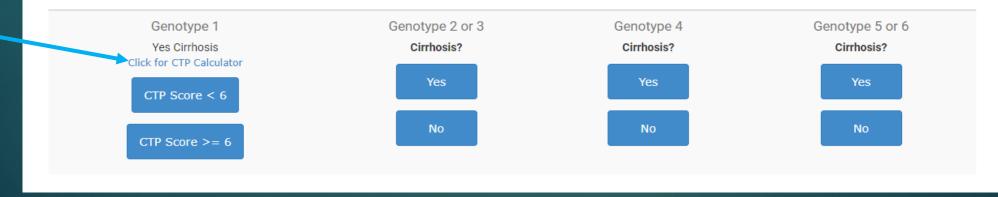
Back to website

https://anthc.org/what-we-do/clinical-and-researchservices/hep/hep-c-treatment-information/

Treatment Naïve Decision Trees (click on Yes or No to begin)

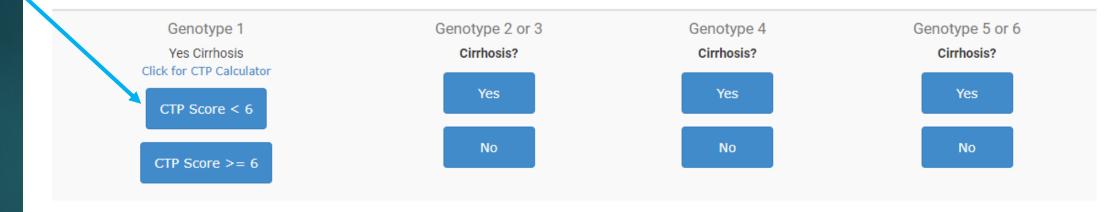


Treatment Naïve Decision Trees (click on Yes or No to begin)



linical Calculators	Child-Turcotte-Pu	gh (CTP)	Calculator	Share 2
CTP Calculator	Use the Child-Turcotte-Pugh Classificati applicable Clinical and Lab Criterias, the		Cirrhosis calculator to estimate the cirrhosis severity fication at the bottom.	/. Select the
APRI Calculator	Clinical and Lab Criteria			Point
BMI Calculator	Encephalopathy			
CrCl Calculator		•	None	+1
		0	Mild to moderate (grade 1 or 2)	+2
FIB-4 Calculator		0	Severe (grade 3 or 4)	+3
Glasgow Coma Scale	Ascites			
GFR Calculator		0	None	+1
MELD Calculator		0	Mild to moderate (diuretic responsive)	+2
		0	Severe (diuretic refractory)	+3
5AAG Calculator	Bilirubin (mg/dL)			
ubstance Use Screening		0	<2	+1
pols		6	2-3	+2
AUDIT-C Questionnaire		0	>3	+3
AGE Questionnaire	Albumin (g/dL)			
		0	> 3.5	+1
		0	2.8-3.5	+2
		0	< 2.8	+3
	International normalized ratio			
		٥	<1.7	+1
		0	1.7-2.3	+2
		0	> 2.3	+3
	Child-Turcotte-Pugh Class obtair	ned by adding s	core for each parameter (total points)	
	Class A. Least severe liv	er disease		5 points

Treatment Naïve Decision Trees (click on Yes or No to begin)



Treatment Naïve Decision Trees (click on Yes or No to begin)



https://anthc.org/what-we-do/clinical-and-research-services/hep/hep-ctreatment-information/

Treatment Tools

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				DOB		MRN
Name				Phone N	umber	
Do you currently have:						
1. Private Health Insurance	for you	rself or	through	your spo	use?	
No	Yes		[If yes	, get cop	y of ins	urance card]
2. Medicaid -OR- Denali Kid	d Care?	(circle	which or	ne)		
No	Yes					
3. Medicare						
a. Medicare Part A/B on	ly?	No_		Yes		
b. Medicare Part D?		No_		Yes		
c. Medicare with Medica	id?	No_		Yes		
[If Medicaid & Medicare	without	Part D,	submit	through N	ledicare	pharmacy program]
4. VA Benefits						
No	Yes	, cu	irrently e	ligible & I	egistere	d for benefits? Yes/No
5. TriCare?						
No	Yes					
Screening done by:					Date:	//
Next Steps:						

For VA/TriCare, coordinate with local VA for coverage and treatment.

ANTHC Liver Disease & Hepatitis Program 09/2018

Based on recommendations and insurance coverage, it was decided to proceed with Harvoni (ledipasvir/sofosbuvir) 90mg/400mg 1 po qd x 12 weeks

Medications Interactions



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Treatment Reference Tools

5 HEP Drug Interactions			-	UNIVERSITY OF LIVERPOOL		Donate N	low →
About Us Interact	tion Checkers	Prescribing Resources	Videos	Site N		Apps ntact Us	∽ Support Us
	Having trouble	e viewing the interactions? Clicl	< here for the l	nteraction	Checker Lite.		
HEP Drugs		_	Co-medications		Drug Interactions Check HEP/ HEP drug interactions		
led	Ň	clop		×	Switch to table view		
• A-Z Class	Trade	• A-Z Class			Reset Checker		er
Ledipasvir/Sofosbu	uvir (i)	Pantoprazole		i	Potential Interaction		ction
Ledipasvir/Sofosbu	Ledipasvir/Sofosbuvir (i)			()	Ledipasvir/Sofosbuvir		
		Clopidogrel		()	Pantoprazole		le
		Clopidogrel		i	More Info		~
		Metoclopramide		()	No Int	eraction Ex	pected
		Ticlopidine		(i)	Ledip	asvir/Sofc	osbuvir
		Zuclopentixol		í	(Clopidogre	el

Common Medical Interaction

Potential Interaction

Ledipasvir/Sofosbuvir

Pantoprazole

Summary:

Coadministration has not been studied, but data with omeprazole show only a small decrease in ledipasvir exposure. Proton pump inhibitor doses comparable to omeprazole 20 mg can be administered simultaneously with ledipasvir/sofosbuvir. Proton pump inhibitors should not be taken before ledipasvir/sofosbuvir.

Description:

Proton pump inhibitor doses comparable to omeprazole 20 mg can be administered simultaneously with ledipasvir/sofosbuvir. Proton pump inhibitors should not be taken before ledipasvir/sofosbuvir. *Harvoni Summary of Product Characteristics, Gilead Sciences Ltd, November 2014.*

Proton-pump inhibitor doses comparable to omeprazole 20 mg or lower can be administered simultaneously with ledipasvir/sofosbuvir under fasted conditions. Harvoni US Prescribing Information, Gilead Sciences, October 2014.

View all available interactions with Ledipasvir/Sofosbuvir by clicking here.

Based on this information, her Pantoprazole was reduced to 20mg qd which is to be taken at the same time of her Harvoni.

- Patient ultimately began Tx with Harvoni on 10/31/17 and presented to clinic with medication in hand.
- Follow up appointments and lab monitoring was discussed extensively and arranged that day.
- Patient also had close followed with Behavioral Health Consultant to avoid EtOH relapse and to provide additional support due to depression

Monitoring During Treatment

Monitoring During Treatment

- Week 2 (only with ribavirin)
 - ____CBC CMP¹
- Week 4
- HCV RNA
- ____CBC
- ____ CMP¹
- Pregnancy test
- ____ HBV DNA³
- Weeks 8, 12, 16, 20, & 24
 - ____ CBC
 - ____ CMP¹
 - Pregnancy test
 - ____ HBV DNA³
 - ____ HCV RNA (only at end of treatment)
- 1-Sofosbuvir-based regimen If GFR <30, no safe recommendation.
 - With ribavirin If GFR <50, decrease dose (refer to package insert).
- 2- Child-Pugh Calculator: <u>https://www.hepatitisc.uw.edu/page/clinical-calculators/ctp</u> Child-Pugh B or C- Do not treat with Mavyret[™], Zepatier[™], or Vosevi[®]
- 3- HBV DNA: If cAb+ & HBV DNA (+) pre-treatment **OR** if Hep B carrier **OR** seroconverted carrier, check HBV DNA monthly during treatment & 12 weeks after treatment. If HBV DNA (-) pre-treatment & not a carrier, check again only at end of treatment.

Monthly follow-up in clinic or by phone:

- ____ Managing side effects
- ____ Medication adherence discussion
- ____ Alcohol intake
- ____ Birth control reminder
- ____ Refill reminder

Monitoring After Treatment

Monitoring After Treatment:

12 weeks after last dose:

- CBC
- LFTs
- HCV RNA (to test for cure)
- AFP (if more than 6 months since last result)
- HBV DNA³

6 months post-treatment:

- If Advanced Fibrosis or Cirrhosis prior to treatment continue AFP & RUQ q 6 months to screen for hepatocellular carcinoma (HCC)
- 1 year post-treatment for 5 years:
 - Zero to minimal scarring (F0-F2): yearly CBC & LFTs
 - Advanced Fibrosis (F3): RUQ US & AFP q 6 months; yearly CBC, LFTs, & AFP
 - Liver Field Clinic appointment every 2-3 years
 - Cirrhosis (F4): RUQ US & AFP q 6 months; yearly CBC, CMP, AFP, PT/INR
 - Yearly Liver Field Clinic appointment

Complicating Factors

- Pt was hospitalized at Providence 1/18 for neck cellulitis likely odontogenic vs pharyngeal source with resulting acute respiratory failure requiring intubation, severe sepsis/septic shock.
- During this time she lost her Harvoni therefore did not complete the last 2 weeks of her 12 week Tx regimen.

Lab Monitoring

	Week 0 (9/27/17)	Week 4 (11/28/17)	Week 8 (due 12/26/17)	Week 12 (1/23/18)	12 weeks post Tx (due 4/17/18, done 4/30/18)
CBC	WBC-10.89H RBC-4.58 Hgb-12.6 Hct-38.6 Plat-218	WBC-9.41 RBC-4.41 Hgb-11.9 Hct-37.5 Plat-531H	Not Obtained Due to Hospitalization	WBC-10.64H RBC-3.95 Hgb-10.5L Hct-32.7L Plat-545H	WBC-7.89 RBC-4.64 Hgb-11.7 Hct-36.4 Plate-419H
CMP	BUN-13 Creat-1.19H Est GFR-48L Alk Phos-150H ALT-35 AST-68H Tbili-0.8 Alb-3.6	BUN-17 Creat-1.03 Est GFR-57L Alk Phos-135H ALT-21 AST-27 Tbili-0.4 Alb-2.8L	Not Obtained Due to Hospitalization for sepsis	BUN-27H Creat-1.36H Est GFR-41L Alk Phos-79 ALT-29 AST-19 Tbili-0.5 Alb-3.5	BUN-12 Creat-0.92 Est GFR->60 Alk Phos-124 ALT-18 AST-22 Tbili-0.30 Alb-3.8
HCV RNA	HCV RNA Quant - 342,000 IU/ml, 5.53 logIU/ml	HCV RNA Quant <15IU/ml, <1.18 logIU/ml	Not Obtained Due to Hospitalization	HCV RNA Quant <15IU/ml, <1.18 logIU/ml	HCV RNA Quant <15IU/ml, <1.18 logIU/ml

> Pt is doing well to this day and was ecstatic to accomplish this goal.

- I did obtain one last viral load on 9/5/18 to assure SVR since she had the lapse in Tx for 2 weeks
- She will continue to have cirrhosis monitoring
 - CMP, AFP, and Liver US q 6 mos
 - ► CBC, PT/INR q 12mos
 - ► f/u with ANMC Liver Clinic q 12 mos



En route to Fenway Park for Game 2 of American Leauge Championship Series – Red Sox vs. Astros





of results may vary. Your doctor will tell you how long you should take MAVYRET.

Please read a twief summary of important product information below, including the intended use and who should not take MAVYRET.

The second of

What is the most supertant information 1 should know about MAVVRETT MAVVRET can cause assister side effects, achieves should be a series statement of the series of the series of the MAVVRET, your docker will do blood tests to check for beputit II was reflection. If you have not not leagerful a way an adoctore, the beputits II was could because achieve again daving or after tradment of beputition C ways with MAVVRET. Hepatits B were because acies again failed nectional daving and saving to after tradment of beputition C ways with MAVVRET. Hepatits B were because acies again failed nectional daving series series. See problems including daving the series of the s liver Lokan and death. Your docker will monitor you if you are at init for hepable. It mus machination change heatment and after you slop Loberg MARTIET for more information plant side effects, see the sociale "Must are the possible side effects of MARTIET"

What is MAVYRETT

MAVYRET is a prescription modicine used to treat adults with closesic disating a long liner) hepablis C vino; (HCV) groutspes 3, 2, 3, - 4, 5 or 6 inflection without contenses or with componential contense. MAVYRET contains the two modicines glocoprove and planetance. B is not known if MAVYRET is safe and reliable in other some 18 years of age.

Do not take MARYEET if you.

fase certain liver problems

also lake any of the following medicines
 also save (EVOTA2", REVATA2")

- education GUFACENT, REFAMANCE, REFAILDET, REMACCEASET)

Betwee pairing MURTHEEL and your doctor adout all of your medical candidoon, including if your

have ever had logarith II was infection
 have low published other than logarith C was exection.

are pergnant or plan to become program. It is not known if MAVYECT will have undown today.
 are benetiseling or plan to beneticed. It is not known if MAVYECT parties who your benetiseling. Tak to your decire alcost the best

way to hard you hady if you to be MAYNEL. Ted your ducker aloud all the endicises you take, including procession and over the counter medicises, wharmes, and herhal supplements. MAYNELT and other medicises may affect each other. This can cause you to have be much or not enough MAYNELT or other medicises in your bady. This may affect the way MARYRET or your other medicines work, or may cause sale effects.

Beep bird of your confidence to show your device and phononacial. • The can ack your device or phononacial for a hild of machines that enterest with MAMYREX. • Do not static tables, a new nonlinear without being your device. They device on hild your of a is sale to take MAMYRET with other machines.

New should I take MAXYRET?

 Ease MAYNET Fourth or size decks belo yes to take it. Do not choose your deck unless your ducks help you to.
 Ease MAYNET fourthers at one inne cach day. Late MAY/RET with food.
 It is important Bull you do not mean or ship down of MAY/RET during brackmont.

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· If you must a done of M/W/VRET and it is

. Lets that IR hears from the term you mainly take MAYYEET, take the encoded dose with food as soon as possible. Then take your ment done at your stand limp.

 More than 18 toors how the time you anoully take MAVYRET, do not take the mining date. Take your next date as usual with load. If you take two much MARYNET, call your docker or go to the tecaned tecpital emergency rocan right away.

What are the possible side effects of MAVYRETT MAYTET care care series side effects, including: • Repairin 8 view reactivation. See "What is the next important information 1 should know about MAVYRETT" The mast common side officies of MAVYRET exclude headache and fanchees. These are not all the possible side affects of MAVVIE1. Call year doctor for moderal advice alload side effects. You may report side effects to FDA at 1-800-FDA (088).

How should I store MAVYRET? • Stare MAVYRET at or below RG/F CR712. * Stein MAYTRET in its organise failer package until you are ready to take it. Keep MAYTRET and all medicines not of the reach of children. General internation should be safe and effective use of MAYTRET Medicines are reachines prescribed. Do not give MAYTRET to other people, even if they have the same symplaces body that a condition for which it was not prescribed. Do not give MAYTRET to other people, even if they have the same symplaces body music it may have them. You can ask your doctor or pharmacrist for externation about MAYTRET that is wellen for health protessionals.

What are the impredients in MARYTET? Active legendients glocoperor and pitcentasie hactive signations: polyethylane dynak dowide, coposidore (hype K 298, consumediane sodium, legenanellose 2930, eue oxide red, lactime monityktule, polyethylane glycal 3350, propriem glycal monocupryble (hype K), sodium stearyl furnasie, filansum dowide, and vitame E decepteral polyethylene glycal successie. The tablets do not contain glyton.

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9

OUTERONT.

If the typical "subway go-er" is being empowered to seek out Tx for Hepatitis C then the typical provider should also feel empowered to Tx. The Tx is available, easy, effective, and support is out there, if needed.