

Web Material

Comparative Effectiveness of Direct-Acting Antivirals for Posttraumatic Stress Disorder in VA Patients with Hepatitis C Virus Infection

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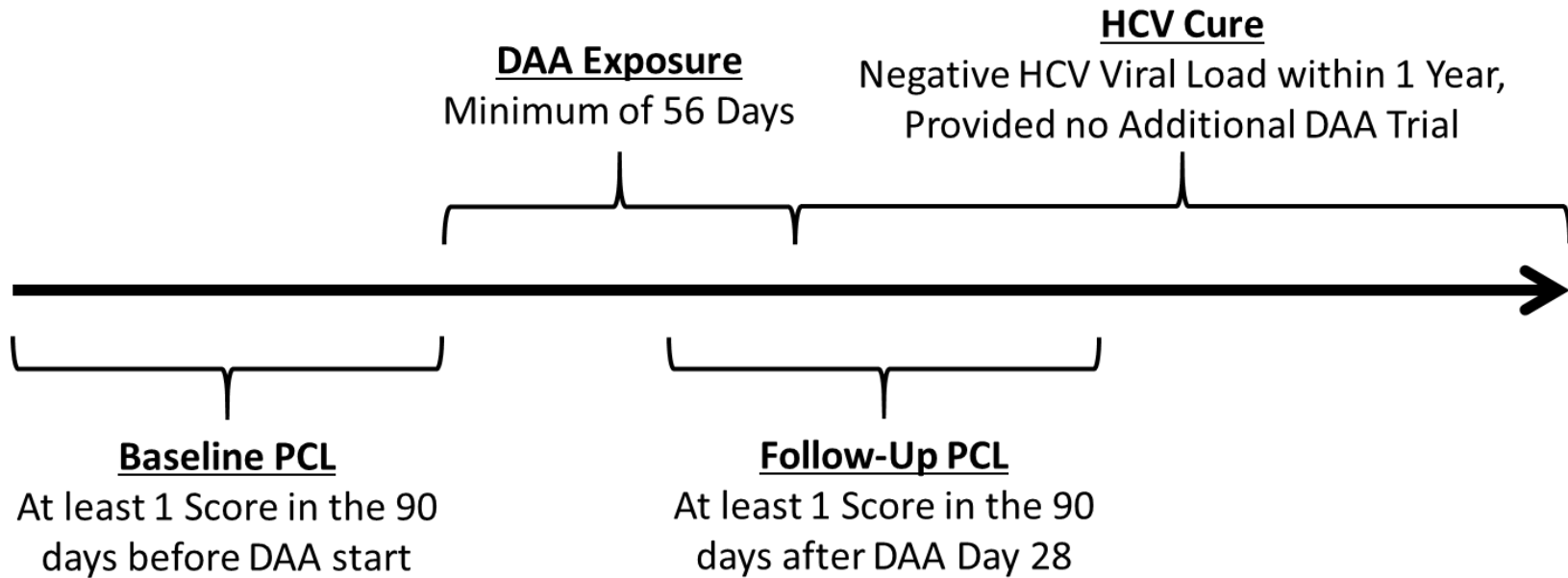
Web Table 1: Patient Selection for Analysis of Direct-Acting Antivirals (DAAs) for Posttraumatic Stress Disorder (PTSD) ^a		
Question		Answer
A	How many Department of Veterans Affairs (VA) patients had any diagnosis of PTSD between FY2000 and FY2019?	2,098,389
B	How many patients from (A) also had a diagnosis of Hepatitis C Virus (HCV)?	146,915
C	How many patients from (B) received at least one prescription of a DAA for HCV?	47,220
D	How many patients from (C) received at least one prescription for GLE/PIB, LDV/SOF, or SOF/VEL?	36,347
E	How many prescriptions from (D) followed a 6-month washout of that medication?	37,825
F	How many prescriptions from (E) were continued for at least 56 days?	26,443
G	How many starts from (F) had a PTSD Checklist (PCL) within 90 days prior to start.	1,063
H	How many starts from (G) had a PCL within 90 days after the 28-day point?	253
Detailed Information from (H): Person Trials from All Potential Patients		
	GLE/PIB	LDV/SOF
	54	145
		SOF/VEL
		54
^a GLE/PIB = Glecaprevir/Pibrentasvir, LDV/SOF = Ledipasvir/Sofosbuvir, SOF/VEL = Sofosbuvir/Velpatasvir		

Web Table 2. Assessment of Potential Confounding, as Measured by Standardized Mean Difference^{a,b}				
Association	Outcome	Exposure		
Variable	15-Point Improvement	GLE/PIB versus LDV/SOF	GLE/PIB versus SOF/VEL	SOF/VEL versus LDV/SOF
Hepatitis Disease Status				
Thousands of Days Since HCV Diagnosis	0.01	0.26	0.18	0.43
Fibrosis (FIB-4 Score)				
Mild (<1.45)	0.29	0.15	0.19	0.35
Moderate (≥1.45 and ≤3.25)	0.28	0.18	0.21	0.39
Advanced (>3.25)	0.04	0.05	0.00	0.05
PTSD Treatment History				
Thousands of Days since PTSD Diagnosis	0.08	0.14	0.02	0.15
Number of Prior EBA Trials	0.20	0.09	0.22	0.12
Number of Prior EBP Trials	0.07	0.05	0.05	0.00
PCL Timing, Version, and Severity				
Days from DAA Start to Earliest Baseline PCL	0.16	0.46	0.20	0.25
Days from Baseline PCL to Follow-Up PCL	0.22	0.21	0.07	0.13
Days from DAA End to Follow-Up PCL	0.09	0.31	0.54	0.26
Baseline PCL	0.50	0.04	0.15	0.11
Baseline PCL Score ≥31	0.37	0.02	0.22	0.20
Concurrent Treatment				
Sessions of EBP for PTSD	0.25	0.19	0.14	0.05
Weeks of EBA for PTSD	0.08	0.01	0.24	0.25
Any Non-EBA Antidepressant	0.10	0.42	0.35	0.07
Any Anticonvulsant	0.30	0.04	0.10	0.06
Any Sedative/Hypnotics	0.40	0.54	0.00	0.54
Any Opioid	0.26	0.15	0.27	0.42
Any Atypical Antipsychotic	0.09	0.14	0.17	0.04
Any Prazosin	0.23	0.36	0.04	0.32
Any FDA Approved Medications for AUD	0.28	0.35	0.10	0.26
Any Opioid Agonist Therapy	0.09	0.29	0.23	0.06
Patient Characteristics at Baseline				
Age	0.09	0.20	0.32	0.52
Women	0.19	0.32	0.38	0.07
Married	0.04	0.11	0.14	0.25
Rural	0.24	0.14	0.05	0.19
White Non-Hispanic	0.05	0.22	0.04	0.26
Black Non-Hispanic	0.04	0.19	0.14	0.33
Hispanic	0.16	0.25	0.20	0.06
Other Racial or Ethnic Group	0.05	0.21	0.00	0.21
Combat Exposure	0.02	0.15	0.08	0.07
Sexual Trauma while in Military	0.14	0.03	0.09	0.06
VA Disability Level 70% or Greater	0.12	0.17	0.30	0.13
Service Use Characteristics in the 1 Year Preceding Baseline				
Number of PTSD Outpatient Clinical Team Visits	0.25	0.30	0.30	0.04
Number of Outpatient Mental Health Visits	0.07	0.17	0.13	0.29
Number of Outpatient Substance Abuse Visits	0.10	0.21	0.02	0.21
Number of Outpatient Primary Care Visits	0.33	0.65	0.26	0.38
Number of Outpatient Specialty Medical Visits	0.10	0.12	0.22	0.14

Number of ED Visits for Psychiatric Indication	0.25	0.47	0.18	0.56
Days of Acute Inpatient Mental Health	0.15	0.35	0.02	0.37
Days of Residential PTSD Treatment	0.07	0.08	0.09	0.15
Days Residential Substance Abuse Treatment	0.03	0.62	0.36	0.29
Comorbidities in the 2 Years Preceding Baseline				
Number of Non-PTSD MH Comorbidities	0.08	0.37	0.17	0.21
Substance Use Disorders	0.29	0.64	0.27	0.41
Depressive Disorders	0.10	0.11	0.09	0.02
Anxiety Disorders	0.14	0.28	0.19	0.09
Number of Non-PTSD PH Comorbidities	0.02	0.04	0.11	0.16
Non-HCV Liver Disease	0.31	0.50	0.13	0.38
Uncomplicated Hypertension	0.17	0.04	0.15	0.20
Obesity	0.08	0.27	0.29	0.02
^a DAA=Direct-Acting Antiviral; PTSD=posttraumatic stress disorder; VA=Department of Veterans Affairs; HCV=Hepatitis C Virus; EBA=Evidence-Based Antidepressant; EBP=Evidence-Based Psychotherapy PCL=PTSD Checklist; MH=Mental Health; PH=Physical Health ^b Covariates associated with both the outcome and exposure (SMD \geq 0.2) are indicated by the gray rows.				

Web Table 3. Confounders Included in Propensity Weighting Model ^{a b}						
Association	Before Weighting			After Weighting		
Variable	GLE/PIB versus LDV/SOF	GLE/PIB versus SOF/VEL	SOF/VEL versus LDV/SOF	GLE/PIB versus LDV/SOF	GLE/PIB versus SOF/VEL	SOF/VEL versus LDV/SOF
Mild Fibrosis	0.15	0.19	0.35	0.01	0.12	0.13
Moderate Fibrosis	0.18	0.21	0.39	0.13	0.03	0.15
Number of Prior EBA Trials	0.09	0.22	0.12	0.01	0.13	0.12
Days from Baseline PCL to Follow-Up PCL	0.21	0.07	0.13	0.09	0.02	0.07
Baseline PCL Score ≥31	0.02	0.22	0.20	0.02	0.18	0.16
Any Concurrent Opioid	0.15	0.27	0.42	0.06	0.16	0.23
Any Concurrent Prazosin	0.36	0.04	0.32	0.21	0.10	0.32
Any Concurrent FDA Approved Medications for AUD	0.35	0.10	0.26	0.19	0.01	0.18
Prior Year PTSD Outpatient Clinical Team Visits	0.30	0.30	0.04	0.19	0.17	0.00
Prior Year Outpatient Primary Care Visits	0.65	0.26	0.38	0.40	0.24	0.15
Prior Year ED Visits for Psychiatric Indication	0.47	0.18	0.56	0.10	0.12	0.21
Non-HCV Liver Disease Diagnosis in Prior Two Years	0.50	0.13	0.38	0.19	0.06	0.25
^a PTSD=posttraumatic stress disorder; HCV=Hepatitis C Virus; EBA=Evidence-Based Antidepressant; PCL=PTSD Checklist; ED=Emergency Department ^b Confounders not balanced by the propensity weighting model (SMD ≥ 0.2) are indicated by the gray rows.						

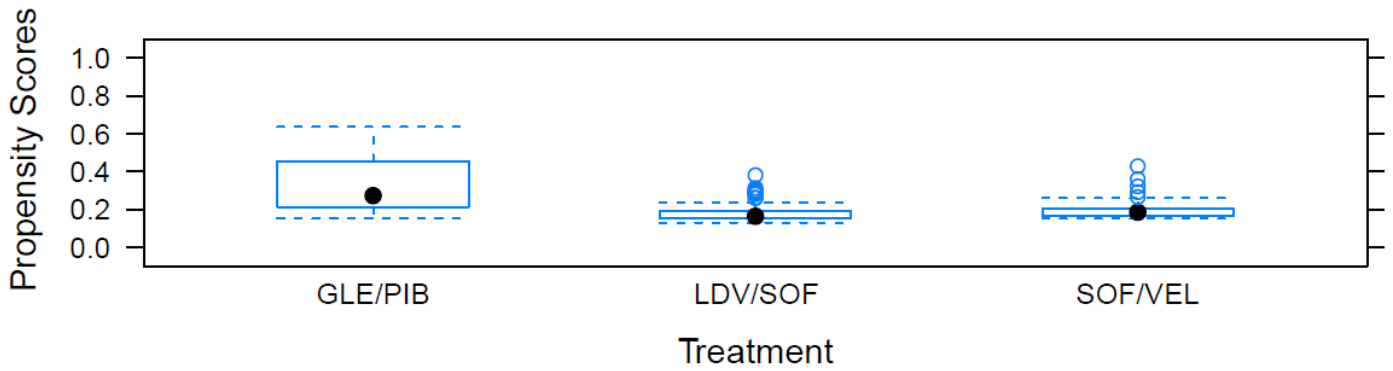
Web Figure 1. Identification of the Analytic Cohort ^a



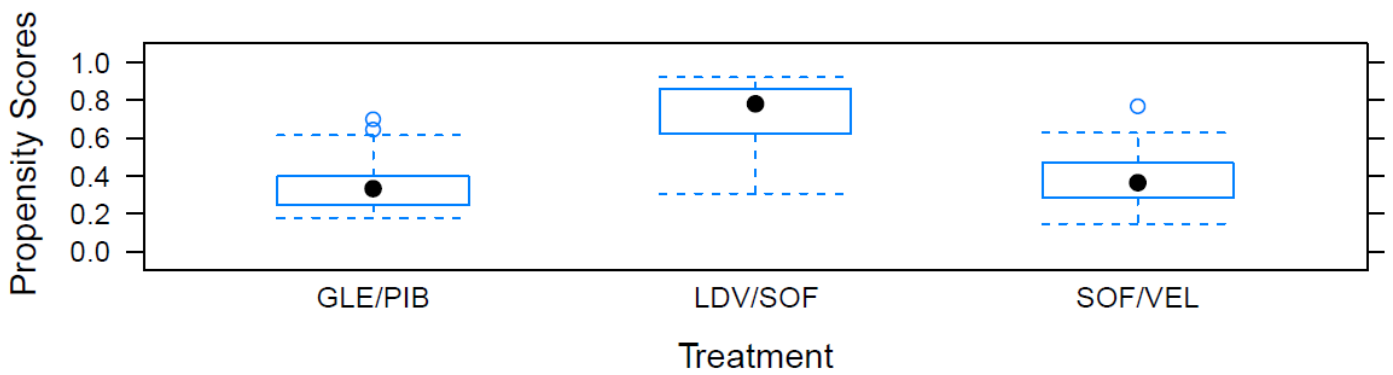
^a DAA=Direct-Acting Antiviral, HCV=Hepatitis C Virus, PCL=PTSD Checklist

Web Figure 2. Propensity Score Distribution ^a

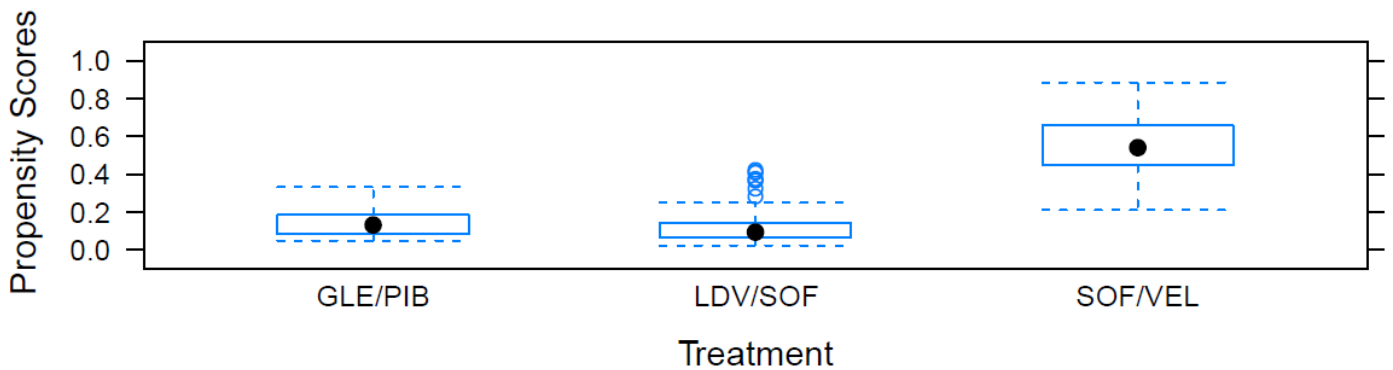
GLE/PIB Propensity Scores by Treatment Group



LDV/SOF Propensity Scores by Treatment Group



SOF/VEL Propensity Scores by Treatment Group



^a GLE/PIB = Glecaprevir/Pibrentasvir, LDV/SOF = Ledipasvir/Sofosbuvir, SOF/VEL = Sofosbuvir/Velpatasvir