Comparison of sofosbuvir +/- simeprevir in heterogeneous, real-world populations of HCV patients over 70 years; data from the TRIO network

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Trio Health

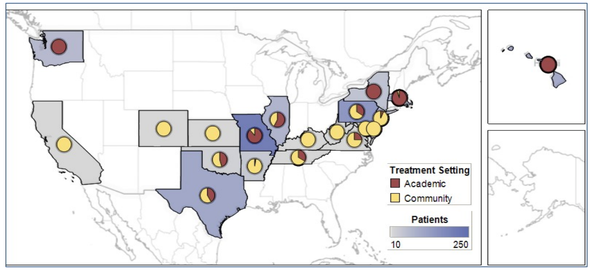
1. BACKGROUND AND AIM

Clinical trials often exclude significant numbers of elderly patients and data on treatment of older patients with HCV is lacking. Data obtained through the Trio Health program were used to evaluate efficacy and tolerability of 12 week regimens containing sofosbuvir or simeprevir in HCV patients over 70 years of age in comparison to patients 70 years or younger.

2. METHODS

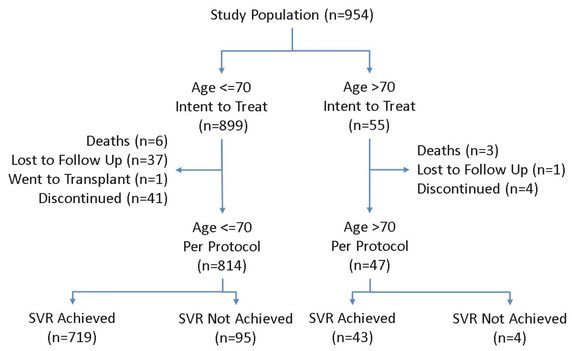
Trio Health is a disease management company that works in partnership with academic medical centers, community physicians and specialty pharmacies to optimize care for Hepatitis C. Data were collected from Rx records through the Trio Platform in partnership with AcariaHealth, AllCare Plus Pharmacy, Aureus Health Services and other specialty pharmacies. Analyses were limited to 954 patients who initiated treatment with 12 week regimens between Dec 2013 and Mar 2014. 55 of the patients were over 70 years of age. Patients were treated in 142 clinics, 30 of which were academic-based.

	Patients	Providers (NPIs)	Practices
Academic	601	79	30
Community	353	142	112
Total	954	219	142



All statistical calculations were performed in IBM SPSS 22. Categorical variables were compared using Pearson chi-square and continuous variables were compared using 2-sample independent T-tests. Matched subgroups were created using 1-1 exact propensity score matching without replacement. Propensity scores were generated from binary logistic regression with the dependent variable of age group (<=70y vs >70y) and the covariates of sex, ethnicity (black vs. other), HCV genotype, initial viral load, cirrhosis status, prior treatment experience, and regimen.

3. PATIENT DISPOSITION



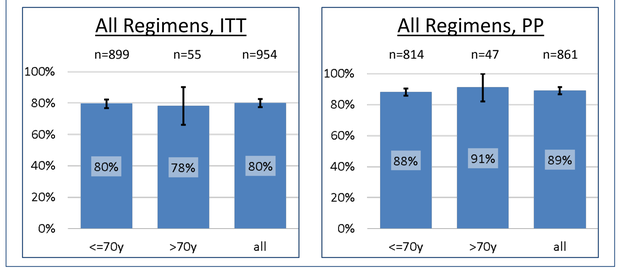
4. BASELINE CHARACTERISTICS

Age group - no. (%)	<=70y 899 (94%)	>70y 55 (6%)	Total 954 (100%)
Age - mean (range)	56 (17-70)	74 (71-86)	57 (17-86)
Male - no. (%)	534 (59%)	30 (55%)	564 (59%)
Black - no. (%)	141 (16%)	10 (18%)	151 (16%)
Platelets <100K/ul - no. (%)	121/783 (15%)	10/51 (20%)	131/834 (16%)
Treatment Experienced - no. (%)	391 (43%)	15 (27%)	406 (43%)
Cirrhosis - no. (%)	267 (30%)	23 (42%)	290 (30%)
Genotype - no. (%)			
GT1	61 (7%)	1 (2%)	62 (6%)
GT1a	448 (50%)	14 (25%)	462 (48%)
GT1b	159 (18%)	20 (36%)	179 (19%)
GT2	193 (21%)	18 (33%)	211 (22%)
GT3	7 (1%)	0 (0%)	7 (1%)
GT4-6	24 (3%)	1 (2%)	25 (3%)
mixed	7 (1%)	1 (2%)	8 (1%)
Initial Viral Load - no. (%)			
<=800K IU/ml	282 (31%)	26 (47%)	308 (32%)
>6MM IU/ml	169 (19%)	9 (16%)	178 (19%)
Regimen - no. (%)*			
PEG + RBV + SOF	377 (42%)	7 (13%)	384 (40%)
RBV + SOF	206 (23%)	20 (36%)	226 (24%)
SMV + SOF +/- RBV	292 (32%)	28 (51%)	320 (34%)

*24 patients received other non-standard therapies (e.g. SOF monotherapy)

5. OVERALL SVR12

Numerator = SVR Achieved; Denominator = Intent to Treat (ITT) or Per Protocol (PP) Population. Whiskers represent 95% confidence intervals.



6. OVERALL DISCONTINUATION

For the overall sample, 45/954 (4.7%) patients discontinued treatment. By age group, 4/55 (7.3%) patients >70 and 41/899 (4.6%) <=70 discontinued. The reasons for discontinuation were broadly described and available for standard therapies in GT1 and GT2.

All

Discontinuation Rates by Reason	GT1 SOF + PEG + RBV	GT1 SMV + SOF +/- RBV	GT2 SOF + RBV
Adverse Events*	6/353 (1.7%)	4/317 (1.3%)	0
Non-Adherence	12/353 (3.4%)	5/317 (1.6%)	4/202 (2.0%)
Financial	0	1/317 (0.3%)	0
Total	18/353 (5.1%)	10/317 (3.2%)	4/202 (2.0%)

<=70y

Discontinuation Rates by Reason	GT1 SOF + PEG + RBV	GT1 SMV + SOF +/- RBV	GT2 SOF + RBV
Adverse Events*	6/347 (1.7%)	3/289 (1.0%)	0
Non-Adherence	11/347 (3.2%)	5/289 (1.7%)	3/184 (1.6%)
Financial	0	1/289 (0.3%)	0
Total	17/347 (4.9%)	9/289 (3.1%)	3/184 (1.6%)

>70y

Discontinuation Rates by Reason	GT1 SOF + PEG + RBV	GT1 SMV + SOF +/- RBV	GT2 SOF + RBV
Adverse Events*	0	1/28 (3.5%)	0
Non-Adherence	1/6 (16.7%)	0	1/18 (5.6%)
Financial	0	0	0
Total	1/6 (16.7%)	1/28 (3.5%)	1/18 (5.6%)

*Adverse events were specified as "general intolerance" and/or "rash".

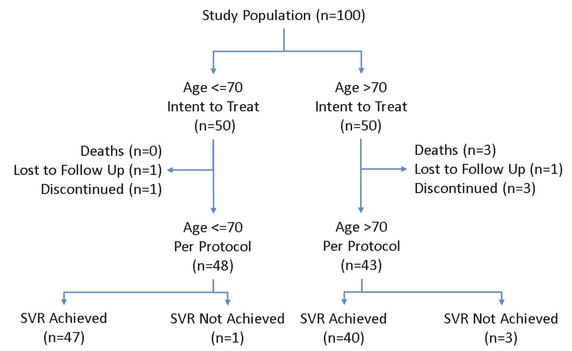
7. PROPENSITY SCORE MATCHING

From the 899 patients <=70y, exact propensity score matches were found for 50 of the 55 patients >70y. Matches were based on the variables of sex, ethnicity (black vs. other), HCV genotype, initial viral load, cirrhosis status, prior treatment experience, and regimen.

Age group – no. (%)	before matching <=70 899 (94%)	before matching >70 55 (6%)	p	after matching <=70 50 (50%)	after matching >70 50 (50%)	p
Male %	59%	55%	0.477	54%	54%	1.000
Black %	16%	18%	0.622	16%	16%	1.000
Genotype %						
GT1	74%	65%	0.081 *	66%	66%	1.000 *
GT2	21%	33%		32%	32%	
GT3	0.8%	0%		0%	0%	
GT4-6	3%	2%		2%	2%	
Mixed	0.8%	0%		0%	0%	
Initial Viral Load >6MM IU/ml %	19%	16%	0.648	18%	18%	1.000
Cirrhotic %	30%	42%	0.059	38%	38%	1.000
Treatment Experienced %	43%	27%	0.018	28%	28%	1.000
Regimen %						
SOF+PEG+RBV	42%	13%	0.001	14%	14%	1.000
SOF+RBV	23%	36%		32%	32%	
SMV+SOF+/-RBV	32%	51%		54%	54%	
Other	3%	0%		0%	0%	

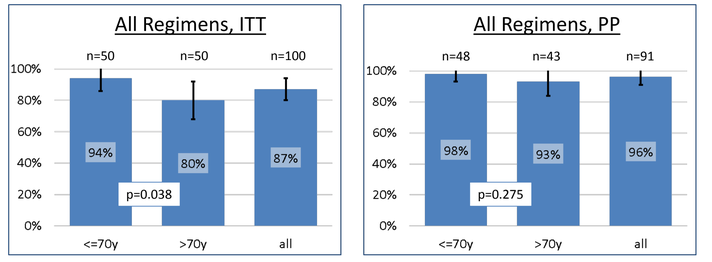
*considers only GT1 vs non-GT1

8. MATCHED SAMPLE PATIENT DISPOSITION



9. MATCHED SAMPLE SVR12

Numerator = SVR Achieved; Denominator = Intent to Treat (ITT) or Per Protocol (PP) Population. Whiskers represent 95% confidence intervals.



10. SUMMARY

Of 954 patients on 12 week regimens, 55 (6%) were >70 years of age. 35/55 (65%) were GT1, 18/55 (33%) GT2, 23/55 (42%) had cirrhotic disease and 15/55 (27%) had been previously treated. The predominant treatment for the >70y group was SMV + SOF +/- RBV (28/55, 51%). Overall SVR12 rates in the >70y group were 78% and 91% for the intent to treat (ITT) and per protocol (PP) populations, respectively. These values were not significantly different from the <=70y group results.

The SVR12 rates in the balanced propensity-score matched samples were 80% (40/50 patients) and 93% (40/43) for the >70y ITT and PP populations, respectively. Both ITT (47/50, 94%) and PP (47/48, 98%) SVR12 rates for the matched <=70y group were higher than the matched >70y group, though only the ITT SVR12 rates differed significantly.

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