Factors Associated with Medication Adherence among a High-Risk Hepatitis C Birth Cohort

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Background

- The majority of individuals infected with Hepatitis C virus (HCV) are born between 1945-1965, but many were not previously tested due to harsh side effects of drug therapy prior to 2011.1
- Since 2012, the CDC has recommended that all individuals in this birth cohort should be screened one time for HCV.
- 90% of HCV patients treated with 2nd and 3rd generation DAAs achieve a sustained virologic response (SVR) at 12 months, a curable state.2 Failure to achieve SVR is associated with lower medication adherence rates.3,4
- Intravenous drug use (IVDU) is a primary risk factor for HCV, and those with a history of IVDU may be less likely to adhere to medication treatment.

Methods

Sampling Methods and Population

This study recruited pregnant women (n=82) born between 1945-1965 and accessing care at the OU-Tulsa Family Medicine clinic between March-July 2016. This study was approved by the Institutional Review Board of the University of Oklahoma Health Sciences Center.

Prescreening survey

Data collected using the prescreening survey included the following:

Output:
- ARMS score measured using 12 questions on a scale of 1-4, with a minimum score of 12 and a maximum score of 48. Higher score indicates less likely to adhere to current medication.
- Demographics: age and gender.
- HCV Risk factors:
  - Intravenous drug use
  - Tattoos
  - Blood transfusions before 1992
- Depression measured by the PHQ9 score from patients who reported at least one episode of depression.

Results

Results: Depression and ARMS

- Mean ARMS scores were 2.93 points (95% CI: 0.67-5.19) higher among those with mild depression (PHQ 5-9) than those with minimal depression (PHQ 0-4).
- Mean ARMS scores were 2.64 points (95% CI: 0.61-4.68) higher among those with severe depression (PHQ 10-30) than those with a minimal depression (PHQ 0-4).

Note: (*) indicates significant difference in ARMS scores compared to those with minimal depression (p < 0.05).

Results: ACEs and ARMS

- Mean ARMS score was 2.61 points (95% CI: 0.49-4.73) higher among those with at least four ACEs compared to those with three or less ACEs.
- Mean ARMS score did not increase significantly among those with three or four ACEs. Results: ACEs and ARMS

Note: (*) indicates significant difference in ARMS scores than those with three or less ACEs (p < 0.05).

Conclusion

- This is the first study to assess the ARMS score as a predictor of medication adherence among a birth cohort at high risk for HCV infection, and to assess risk factors associated with high ARMS scores, indicating likely low medication adherence.
- Limitations include sample size and due to the cross-sectional nature of the study, a temporal sequence between depression and ARMS score cannot be established.
- This study indicates that depression and ACEs may be risk factors for poor medication adherence in this population.
- Adverse childhood experiences influence adherence significantly when they are accumulated (> 4).
- Depression is significantly associated with increased ARMS score, but this trend stays at a similar level even at the highest PHQ9 scores, suggesting that depression level beyond minimal could be a risk factor for poor adherence.
- Further research is needed to identify confounding factors and other variables that may contribute to increased ARMS scores.

References