



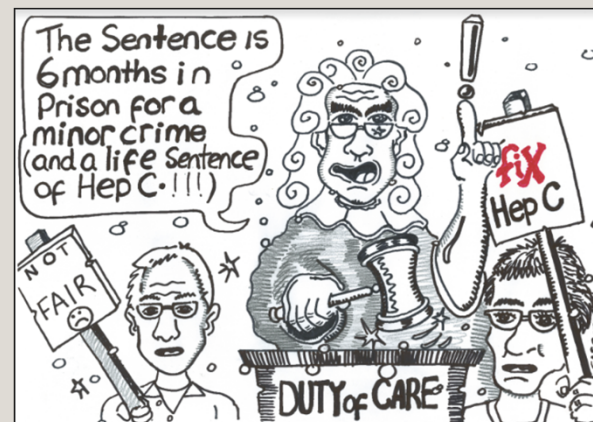
## IMPACT OF HEPATITIS C REMISSION ON GLYCEMIC CONTROL IN PATIENTS WITH TYPE 2 DIABETES MELLITUS

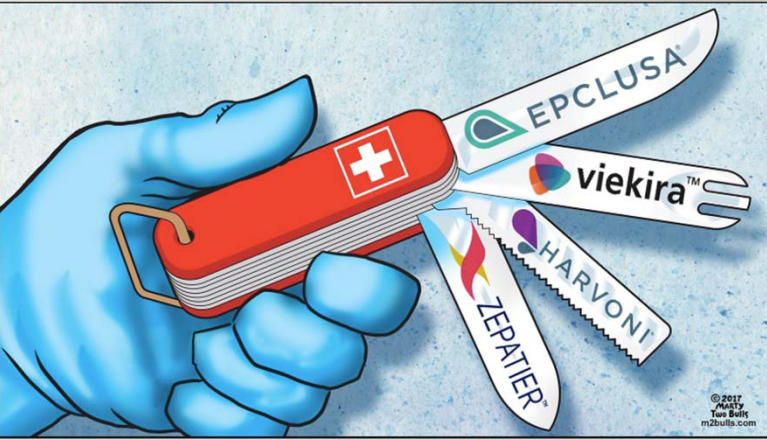
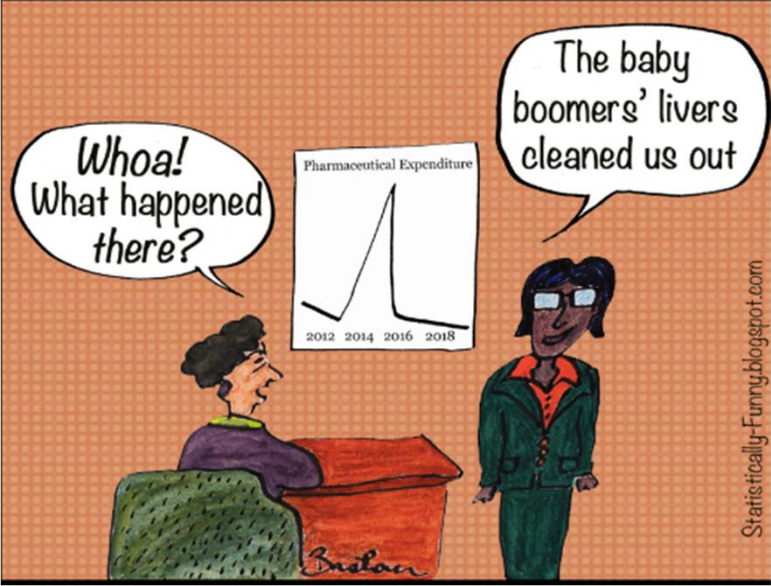
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KARTIK TRIPATHI, MD  
HIMMAT GREWAL, MD  
NITIN TRIVEDI, MD, FACP  
GEORGE ABRAHAM, MD, MPH, FACP, FIDSA

## BACKGROUND

- Chronic hepatitis C: one of the major causes of chronic liver disease and cirrhosis worldwide, affecting 71 million people.
- A significant number of these patients will develop cirrhosis or liver cancer → nearly 400,000 deaths per year.
- Antiviral medicines can cure more than 95% of persons with hepatitis C infection, thereby reducing the risk of death from liver cancer and cirrhosis, but access to diagnosis and treatment is low.







## BACKGROUND

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- Occurrence of HCV is variably reported to worsen the glycemic control in patients with preexisting type 2 diabetes mellitus (T2DM).
- HCV proteins may increase insulin resistance by phosphorylation of serine and threonine residues of the insulin receptors. Triad of insulin resistance, steatosis and inflammatory processes.
- We aimed to investigate if achieving sustained virological response (SVR) after successful treatment of chronic HCV infection with direct acting antivirals (DAAs) improves glycemic control.



## METHODS

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- Retrospective chart review of patients with chronic hepatitis C and T2DM who achieved SVR using DAAs.
- Baseline demographics and disease characteristics were recorded:
  - Age, gender, time of diagnosis of HCV infection
  - Vibration Controlled Transient Elastography (Fibroscan®) staging before and after treatment
  - Type, duration and complications of diabetes mellitus (DM)
  - HbA1c- before and after achieving SVR
  - Glycemic control and change in anti-diabetic medications
- Change in body weight, smoking status, physical activity and other medications were also recorded.





## RESULTS

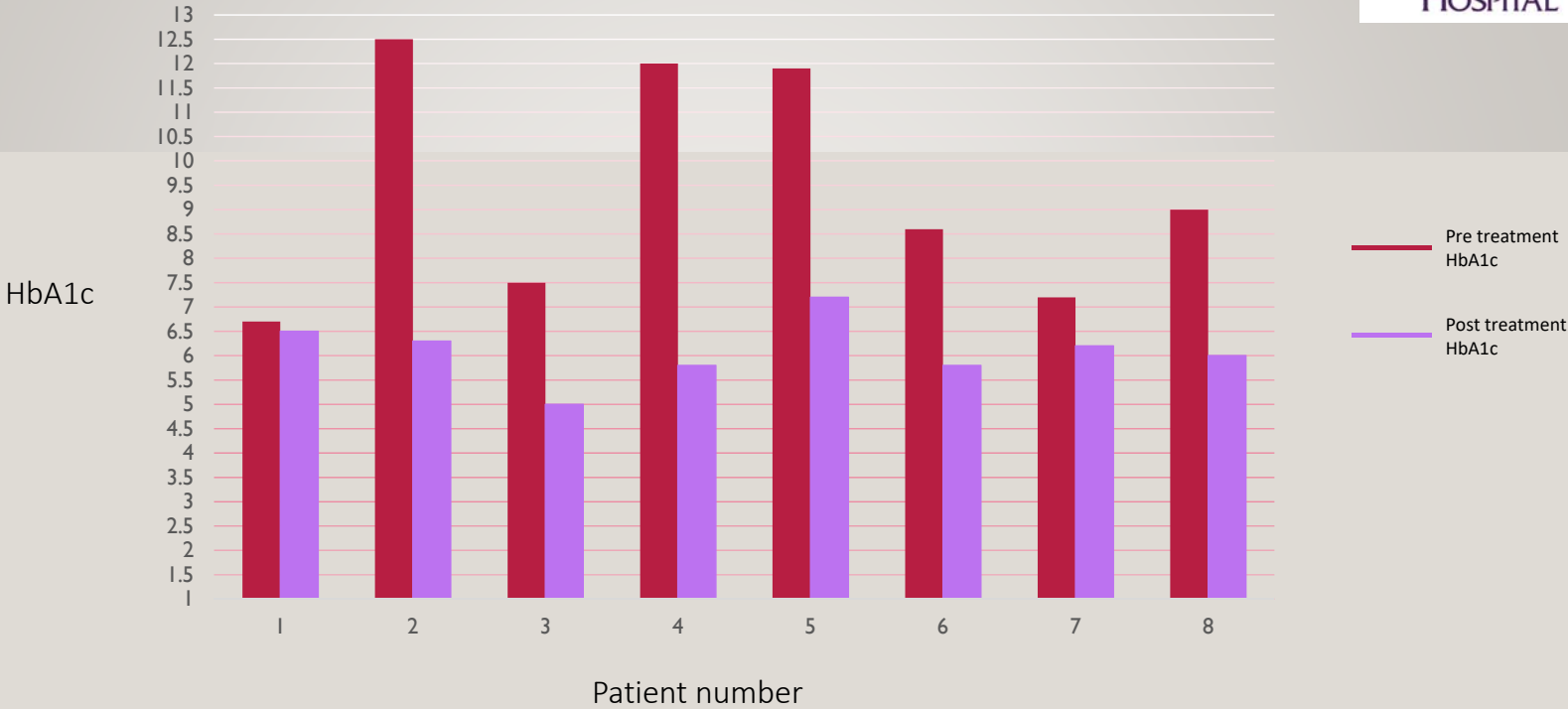
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- Eight out of 12 patients achieved SVR.
- All patients were men, mean age 58.4 years.
- Fibroscan® performed prior to initiation of treatment:
  - Stage F4 75%; F3 12.5%; F0 12.5%.
- All 12 patients had DM > 10 years with  $\geq 1$  micro- or macrovascular complication.
- Mean HbA1c decreased from 9.4 to 6.1 percent after achieving SVR.
- Glycemic improvement in all patients without any documented hypoglycemic events.
- No significant change in body weight.

Patient	DAA's	Treatment Duration	HbA1c (Pre-treatment)	HbA1c (Post-treatment)	FibroScan® score	Medications for DM at diagnosis of Hepatitis C	Medications for DM at SVR
1	Telaprevir	12	6.7 (49.7)	6.5 (47.5)	F4	Glargine 29 IU* daily Aspart 5 IU* Thrice daily	Glargine 29 IU* daily Aspart 5 IU* thrice daily
2	Ledipasvir/ Sofosbuvir	12	12.5 (113.1)	6.3 (45.4)	F4	Glargine 60 IU* daily Lispro 5 IU* thrice daily	Glargine 20 IU* daily Lispro 16 IU* thrice daily Metformin XR 500 mg daily
3	Ledipasvir/ Sofosbuvir	12	7.5 (58.5)	5.0 (31.1)	F4	Metformin 1000 mg twice daily Glipizide 2.5 mg daily	No Meds
4	Simeprevir/ Sofosbuvir	12	12 (107.7)	5.8 (39.9)	F4	Metformin 1000 mg twice daily Detemir 15 IU* daily Lispro 8 IU* thrice daily Glargine 35 IU* daily	Metformin 1000 mg twice daily
5	Daclatasvir / Sofosbuvir	12	11.9 (106.6)	7.2 (55.5)	F0	Metformin 1000 mg twice daily Aspart 15 IU* thrice daily	Glargine 38 IU* daily Metformin 500 mg twice daily Aspart 10 IU* thrice daily
6	Ledipasvir/ Sofosbuvir	12	8.6 (70.5)	5.8 (39.9)	F3	Metformin XR 750 mg daily	Metformin XR 750 mg daily
7	Ledipasvir / Sofosbuvir / Ribavarin	12	7.2 (55.5)	6.2 (42.1)	F4	Metformin 1000 mg twice daily	Metformin 500mg twice daily
8	Ledipasvir / Sofosbuvir	12	9 (74.9)	6 (42.1)	F4	Metformin 1000 mg twice daily	No Meds



Change in HbA1c Before and After Treatment of Hepatitis C







## CONCLUSION

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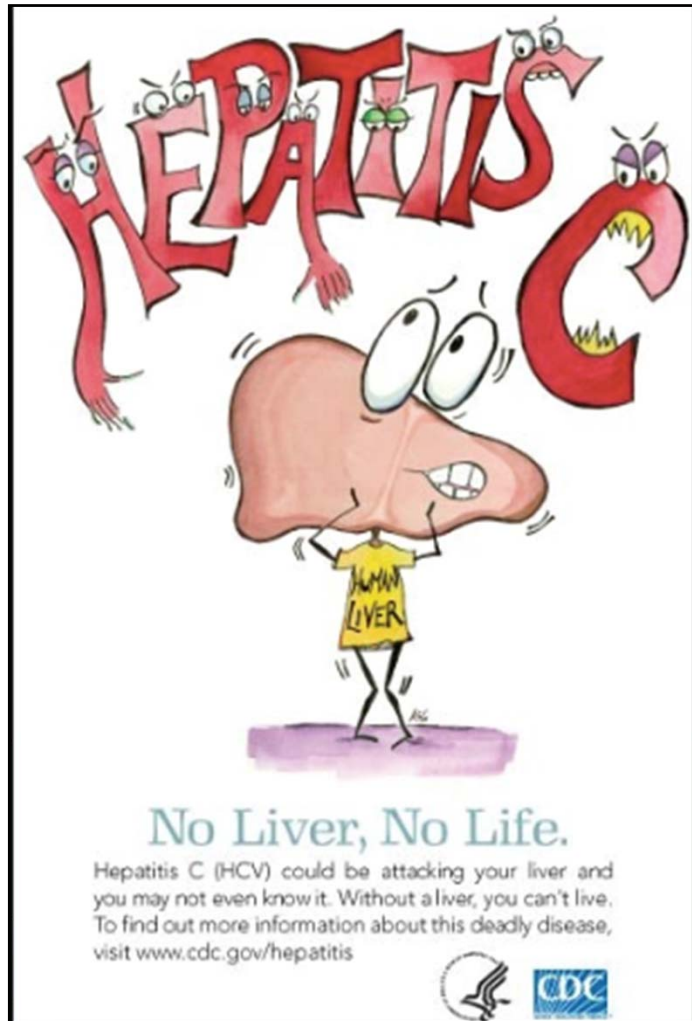
- We observed a significant decrease in HbA1c in patients with SVR.
- This effect was unlikely due to direct effect of DAAs, as the response was sustained after the therapy was completed.
- Although large RCTs are required to firmly establish this effect, findings of our single center study support prompt DAAs treatment for HCV especially in patients with T2DM.
- Better glycemic control is likely to delay or prevent short and long-term complications of diabetes.



## LIMITATIONS

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- Small sample size
- Single center
- Retrospective study and lack of controls
- All subject were males



QUESTIONS?

THANK YOU!