Does Hepatitis C independently increase the risk of colorectal adenoma?

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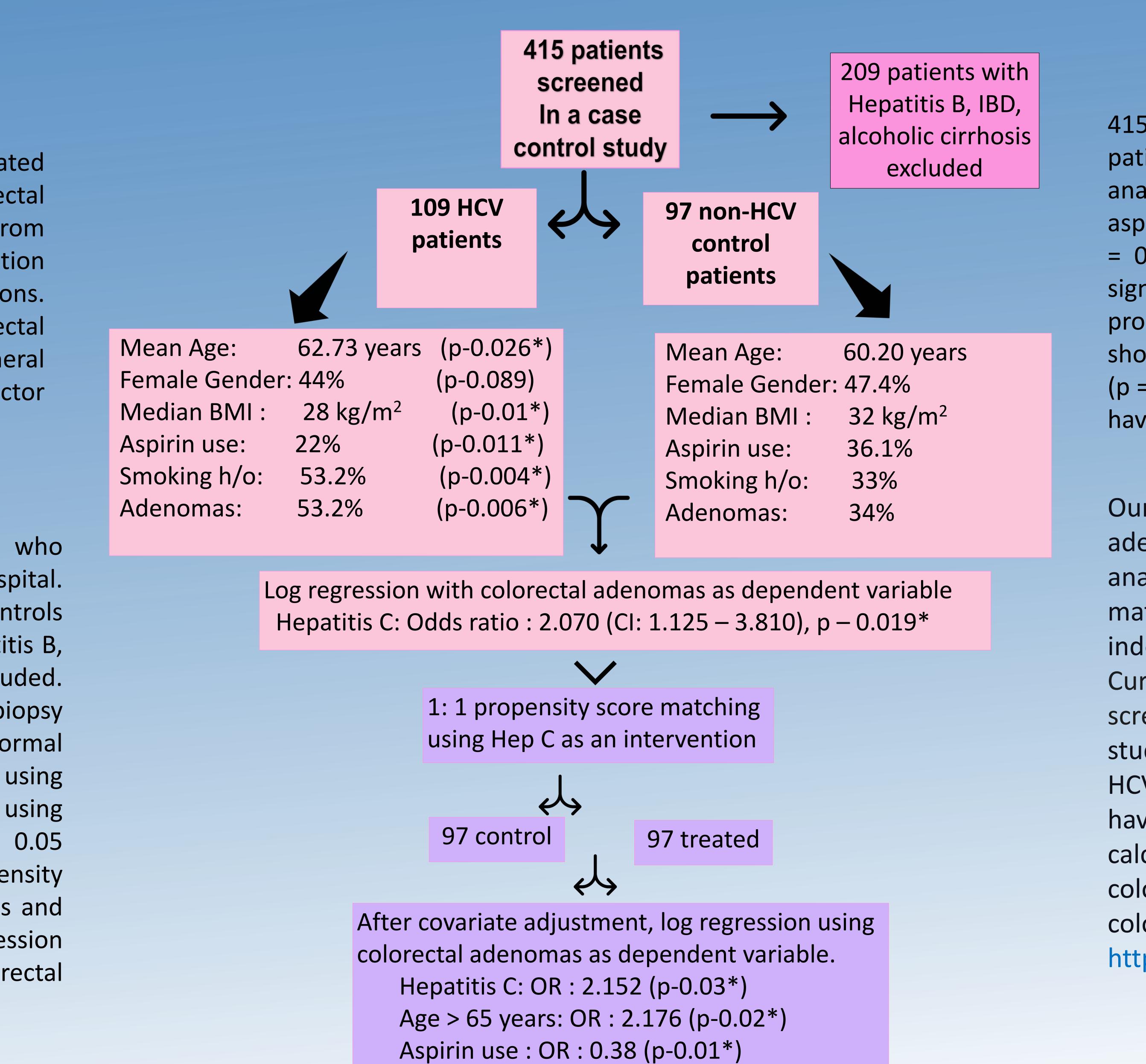
Introduction

Hepatitis C virus (HCV) infection has been associated with extrahepatic malignancies; one such is colorectal carcinoma (CRC). The majority of CRC arise from adenomatous polyps, it is not known if HCV infection influences the growth of these precancerous lesions. This study evaluates the prevalence of colorectal adenomas in HCV patients compared to the general population and if HCV is an independent risk factor for the detection of colorectal adenomas.
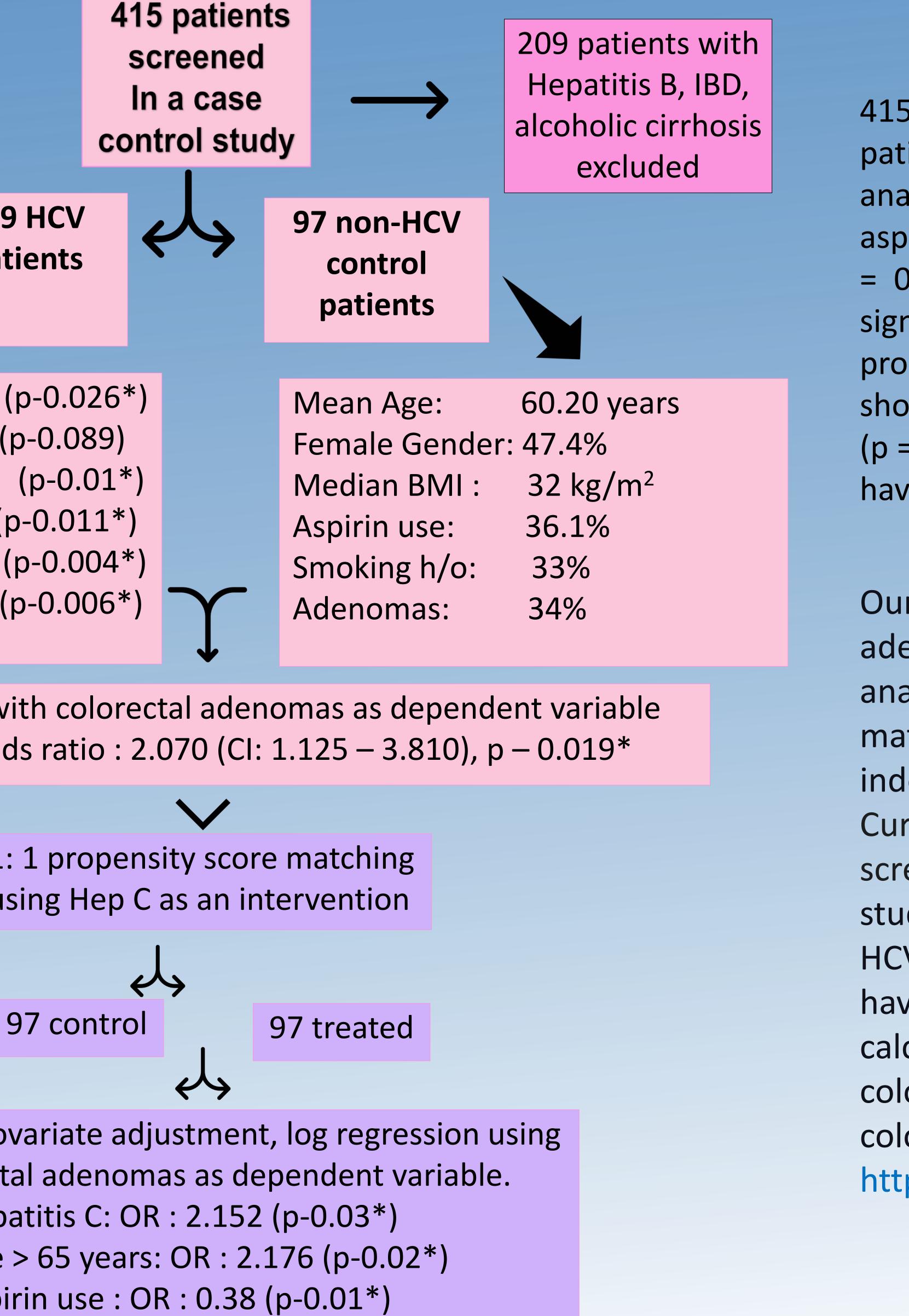
Methods

This case-control study included patients who underwent screening colonoscopy at our hospital. Patients were divided into cases (HCV) and controls (non-HCV). Patients with no biopsy reports, hepatitis B, and inflammatory bowel disease were excluded. Colonoscopy findings were stratified on the biopsy results i.e., hyperplastic, adenomatous, CRC or normal mucosa. Continuous variables were analyzed using Mann Whitney U test and categorical variables using Chi-square and Fisher's exact test with p< 0.05 considered statistically significant. After 1:1 propensity score matching (PSM), a matched cohort of cases and controls was generated. A multivariate regression analysis to compute an odds ratio for colorectal adenoma detection rate was done.

415 patients screened In a case control study

209 patients with Hepatitis B, IBD, alcoholic cirrhosis excluded

109 HCV patients

97 non-HCV control patients

Mean Age:	62.73 years	(p-0.026*)
Female Gender:	44%	(p-0.089)
Median BMI :	28 kg/m^2	(p-0.01*)
Aspirin use:	22%	(p-0.011*)
Smoking h/o:	53.2%	(p-0.004*)
Adenomas:	53.2%	(p-0.006*)

Mean Age:	60.20 years
Female Gender:	47.4%
Median BMI :	32 kg/m^2
Aspirin use:	36.1%
Smoking h/o:	33%
Adenomas:	34%

Log regression with colorectal adenomas as dependent variable
Hepatitis C: Odds ratio : 2.070 (CI: 1.125 – 3.810), p – 0.019*

1: 1 propensity score matching using Hep C as an intervention

97 control   97 treated

After covariate adjustment, log regression using colorectal adenomas as dependent variable.
Hepatitis C: OR : 2.152 (p-0.03*)
Age > 65 years: OR : 2.176 (p-0.02*)
Aspirin use : OR : 0.38 (p-0.01*)

Results

415 patients were screened, of which 109 HCV patients and 97 controls were included. Descriptive analysis showed that age (p = 0.03), BMI (p = 0.001), aspirin (p = 0.01), smoking (p = 0.004), alcohol use (p = 0.01) and adenoma detection (p = 0.006) were significantly different between both groups. After propensity matching, multivariate regression analysis showed patients with HCV had odds ratio (OR) = 2.06 (p = 0.03), and aspirin use had OR = 0.38 (p = 0.01) in having colorectal adenoma.

Conclusion

Our study shows a significantly higher rate of adenomas in chronic HCV patients. On multivariate analysis with and without propensity score matching, HCV infection was found to be an independent risk factor for colorectal adenoma. Current guidelines do not recommend earlier screening for CRC for such patients. Prospective studies would be required to assess if treatment of HCV leads to lower adenoma detection rates. We have also integrated machine learning to create a calculator to detect the probability and number of colorectal adenomas that will be detected on colonoscopy in chronic HCV patients.
https://adenomadetection.herokuapp.com/

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