

Correlation Between Hemoglobin A1c and High Sensitivity C-Reactive Protein in Population with Type II Diabetes Mellitus in the Semaglutide Treatment on Coronary Plaque Progression (STOP) Trial

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BACKGROUND

HbA1c is a biomarker of the presence and severity of diabetes mellitus (DM). High sensitivity serum C-reactive protein (hs-CRP) is a marker of systemic inflammation. Elevated levels of both have been shown to be independently associated with cardiovascular disease.

METHODS

The STOP trial randomized patients with Type II-DM and presence of coronary plaque on CCTA to Semaglutide/placebo. Baseline HbA1c and CRP were measured. Multivariate linear regression analysis was used to examine the association of baseline HbA1C with hs-CRP.

RESULTS

In 107 subjects, mean age was 56.5 ± 8.3 yrs, 67 (63%) were male. Mean duration of diabetes was 16.1 ± 7.5 years, mean HbA1C was 9 ± 1.90 , 89 subjects (83%) were on lipid-lowering medications, and 89 (83%) were on antihypertensives. 14 (13%) were current smokers and 41 (38%) were former smokers. Spearman correlation demonstrated a significant correlation between A1C and hs-CRP at baseline ($R=0.28$ $p=0.0036$). In unadjusted linear regression analysis, compared to subjects with a CRP of <1 , those with a CRP >1 had 1-unit higher A1C levels ($p=0.02$) and those with CRP >3 had 1.2-unit higher A1C ($p=0.01$). When adjusting for age, gender, BMI, hyperlipidemia, hypertension, and smoking, the association was no longer significant in CRP <1 versus >1 ($p=0.21$) and CRP <1 versus CRP >3 ($p=.099$), suggesting a trend towards an association.

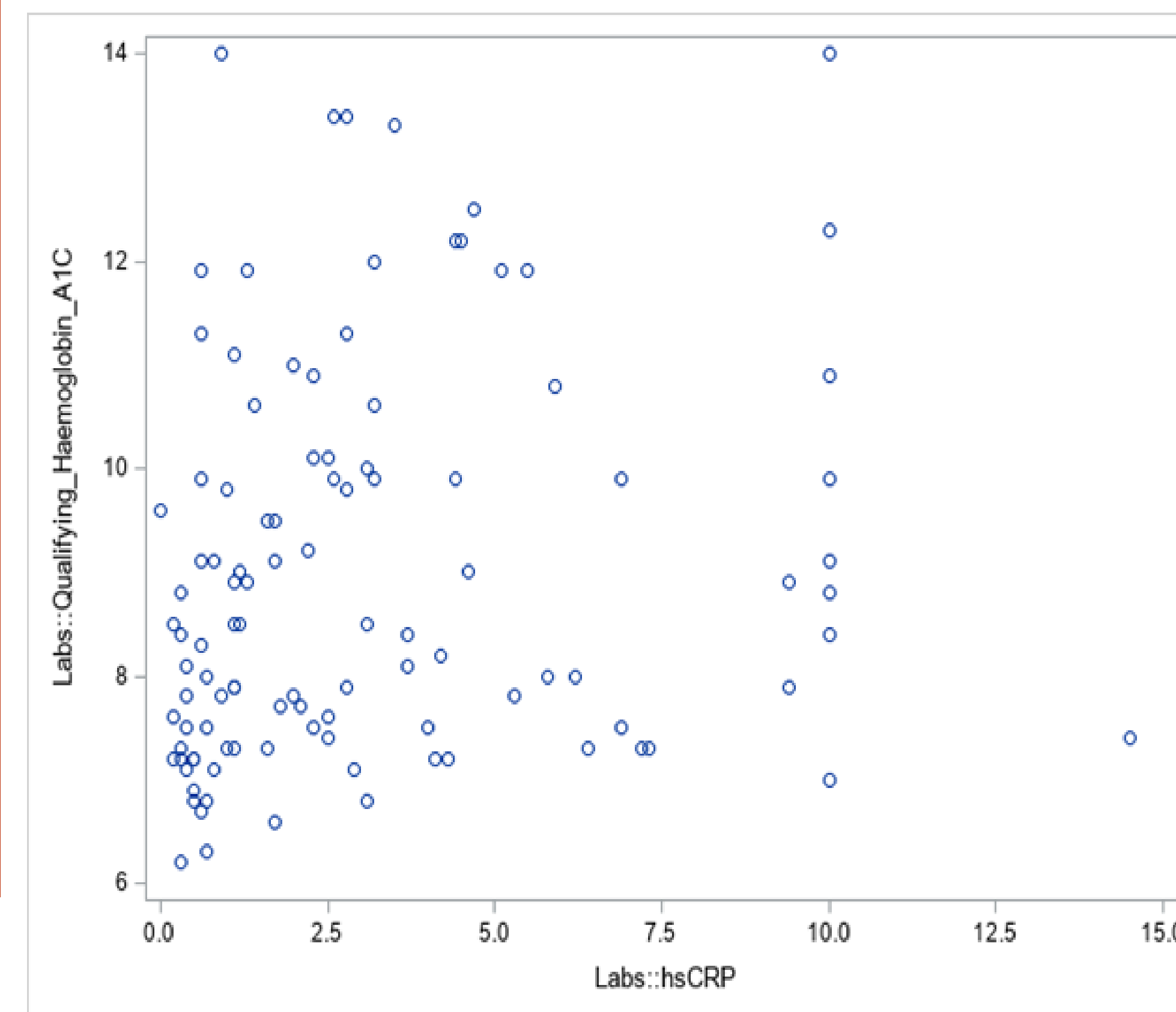
- Elevated levels of HbA1c and/or hs-CRP are associated with cardiovascular disease
- Higher levels of HbA1c are associated with higher levels of hs-CRP
- Poorly-controlled DM is associated with increased systemic inflammation.



CONCLUSION

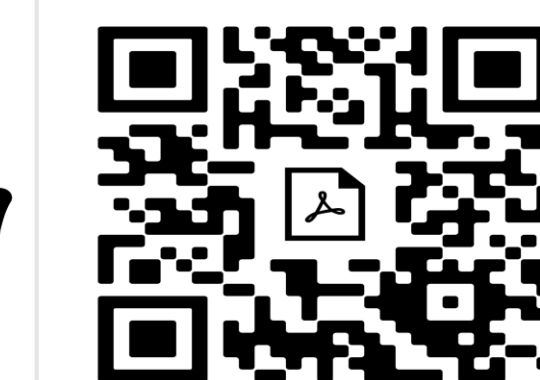
Higher HbA1c levels were associated with increased hs-CRP, demonstrating that poorly-controlled DM is associated with increased systemic inflammation. The lack of statistical significance on multivariate adjusted analysis with a trend towards an association could be due to the relatively small sample size.

FIGURE 1



DISCLOSURE INFORMATION

Authors Have No Disclosure.



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