

Rosiglitazone Decreases C-Reactive Protein to a Greater Extent Relative to Glyburide and Metformin over Four-Years in Spite of Greater Weight Gain: Observations from ADOPT (A Diabetes Outcome Progression Trial)

Kahn SE, Haffner SM, Viberti G, Herman WH, Lachin JM, Kravitz BG, Yu D, Paul G, Holman RR, Zinman B

Diabetes Care (2010); 33:1:177-183

Abstract

Objective: C-reactive protein (CRP) is closely associated with obesity and cardiovascular disease in both diabetic and non-diabetic populations. In short term, commonly prescribed anti-diabetic agents have different effects on CRP; however, the long-term effects of those agents are unknown.

Research Design and Methods: In ADOPT (A Diabetes Outcome Progression Trial), we examined long-term effects of rosiglitazone, glyburide, and metformin on CRP and the relationship between CRP, weight and glycemic variables in 904 subjects over 4 years.

Results: Baseline CRP was significantly correlated with HOMA IR, HbA1c, BMI, waist circumference, and waist/hip ratio. CRP reduction was greater in the rosiglitazone group by -47.6% relative to glyburide and -30.5% to metformin at 48 months. Mean weight gain from baseline (at 48 month) was 5.6 kg with rosiglitazone, 1.8 kg with glyburide and -2.8 kg with metformin. The change in CRP from baseline to 12 months was correlated positively with change in BMI in glyburide ($r=0.18$) and metformin ($r=0.20$) groups but not the rosiglitazone ($r=-0.05$, $p=NS$) group. However, there was no longer a significant correlation between change in CRP and change in HOMA IR, HbA1c or waist-hip ratio in any of the three treatment groups.

Conclusions: Rosiglitazone treatment was associated with durable reductions in CRP independent of changes in insulin sensitivity, HbA1c, and weight gain. CRP in the glyburide and metformin groups was positively associated with changes in weight, but this was not the case with rosiglitazone.