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Cross sectional study of highly sensitive C-reactive protein (hsCRP) in type 2 Diabetes mellitus and its correlation with glycosylated Hb (HbA1C) at tertiary care center

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Objective: Recent evidence suggests that poor glycemic control is significantly associated with the development of macrovascular complications of diabetes. Studies have indicated that highly sensitive C-reactive protein (hsCRP) is an important risk factor for cardiovascular disease. The purpose of this study was to determine the relation between CRP and HbA1c in individuals with diabetes.

Research and design method: - Non institutionalized Indian adults aged 17 years and over with non gestational diabetes was derived from Kle DR. Prabhakar kore hospital and medical research center, Belagavi (July 2016 – September 2016). Respondents with diabetes were stratified by HbA1c level, age, duration of diabetes and hsCRP levels. The main outcome measure was elevated (>3mg/ltr) CRP.

Results: In unadjusted analyses, respondents with diabetes who had elevated HbA1c levels (>6.5%) had a significantly higher percent of elevated hsCRP than people with low (<5.6%) HbA1c levels (P <0.001). In adjusted regression analysis, after controlling for age, sex, smoking, length of time with diabetes, HbA1c was significantly associated with an increased likelihood of elevated hsCRP for higher HbA1c levels.

Conclusions: In this study, the likelihood of elevated hsCRP concentrations increased with increasing HbA1c levels. These findings suggest an association between glycemic control and systemic inflammation in people with established diabetes.

Highly sensitive C reactive protein (hsCRP): A marker of systemic inflammation is emerging as an independent risk factor for cardiovascular disease. High hsCRP levels have been linked to an increased risk of thrombotic events including myocardial infarction. Elevated hsCRP levels have also been linked to an increased risk of later development of diabetes. Furthermore, hsCRP levels are higher in people with diabetes compared with those without diabetes. Less is known about whether hsCRP in people with diabetes is related to level of glycemic control. To provide further insight into the role of inflammation in the development of cardiovascular disease in people with diabetes, we sought to elucidate the link between level of glycemic control and inflammation. The purpose of the study was to investigate the relation between hsCRP and HbA1c in adults with diabetes.

Research design and methods: A sample of respondents >17 years of age was derived from Dr. Prabhakar kore hospital and medical research center Belagavi, a cross-sectional study of a nationally representative sample of non institutionalized Indians. Respondents with diabetes were identified using the question, "Has your doctor ever told you that you have diabetes?" Respondents who answered positively to either of two questions regarding having diabetes "confined only to pregnancy" were excluded. Respondents with diabetes were not identified using laboratory data because blood was drawn on only one occasion and because people with diabetes may not have had elevated serum glucose at the time the blood was drawn. The respondents that had a usable sample of serum for analysis for hsCRP form the basis of this report. People who had used anti-inflammatory drugs or cholesterol-lowering drugs within the previous 30 days were excluded from the analysis, due to the possible effects the drugs might have on hsCRP values. The use of anti-inflammatory drugs was measured by questions regarding the use of prescription medications along with specific questions about the nonprescription use of aspirin and ibuprofen. Prescribed and over-the-counter nonsteroidal anti-inflammatory drugs (NSAIDs) and corticosteroids were classed as anti-inflammatory medications. The use of cholesterollowering drugs was measured by a specific question regarding whether any medication was used for the treatment of elevated cholesterol.

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