P80

Efficacy of Ranolazine in lowering HbA1c in patients with Type 2 Diabetes Mellitus

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Background: Cardiovascular diseases and diabetes mellitus are two disease entities that commonly coexist in a single patient. Ranolazine is an anti-anginal medication that has been shown to have HbA1c lowering effects in patients with diabetes in angina trials. The objective of this study is to determine efficacy and safety of Ranolazine in HbA1c lowering as an add-on therapy to existing anti-diabetic regimen. To date, there is no published systematic review and meta-analysis on this.

Methods: A comprehensive literature search was done. The authors extracted data for characteristics, quality assessment and mean change in HbA1c after at least eight weeks of treatment with Ranolazine. RevMan 5.3 was used to analyze the data.

Results: Six RCTs were included to make up for a total of 1,650 diabetic patients. Most of the studies had moderate risk of bias. The overall analysis showed an HbA1c reduction of 0.35% (-0.68 to -0.03, p value=0.03) however, the population was heterogenous (I2=100%).

Discussion: The results showed a statistically significant lowering of HbA1c with Ranolazine. The heterogeneity was not eliminated by doing sensitivity analyses. The sources of heterogeneity identified were differences in the baseline HbA1c levels, the number of anti-diabetic agents used, duration and dose of Ranolazine therapy, and the presence of comorbidities.

Conclusion: Ranolazine as anti-diabetic therapy shows statistically significant HbA1c lowering effect. It can be a potential treatment option for patients with both diabetes mellitus and angina pectoris. Well-designed, prospective trials are recommended to determine the effect and safety on a less heterogenous population.