

Diabetologia

Journal of the European Association for the Study of Diabetes (EASD)

Abstract Volume
49th EASD Annual Meeting
Barcelona, Spain
23–27 September 2013



The Abstract Volume
of the 49th EASD Annual Meeting is supported by an
educational grant from Sanofi

Effects of 12 weeks of trichosanthis kirilowii and manitolatodimolybdate in the treatment of Hispanic prediabetic patients

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Background and aims: Diabetes evolves through prediabetes, defined as having an impaired fasting plasma glucose (FPG) and HbA1c 5.7-6.4%. People with prediabetes and increased visceral fat (Vf) have higher risk of developing diabetes and cardiovascular disease compared to normoglycemic individuals. The prevalence of prediabetes in Hispanic population has increased appreciably. The aim of this study was to examine the effects of 12 weeks of treatment with trichosanthis kirilowii (Tk) and manitolatodimolybdate (Mm) as a novel combination insulin sensitizer on HbA1c, FPG, and Vf in adult Hispanic obese prediabetic patients.

Materials and methods: This prospective study enrolled subjects aged 18 or older, with HbA1c 5.7-6.4%, FPG 100-125 mg/dl, BMI ≥ 25 kg/m², Vf ≥ 2.1 kg, without any medication, and with normal hepatic or renal function. The patients were instructed to take 2.0mg of Tk and 1.6mg of Mm in one tablet, twice a day during 12 weeks. HbA1c, FPG, and AST/ALT were measured initially and at week 12. Bioelectrical impedance analysis (BIA) was used to estimate visceral fat accumulation and total body water (Zeus 9.9 plus, Jawon medical). All data was obtained using data from labs and BIA. Registered Dietitians (RD) certified in diabetes management provided medial nutrition therapy (MNT) and exercise guidelines based on the American Diabetes Association's clinical practice recommendations.

Results: 93 patients participated; 53.7% were female. The mean age was 42.1 (± 9.4). After 12 weeks of treatment, significant reductions were observed in HbA1c from 6.2 ± 0.26 to $5.6 \pm 0.2\%$, FPG (mean 114 ± 8.60 to 102.9 ; $p > 0.05$),

BMI (32.3 ± 5.9 to 30.4 ± 5.1 ; $p < 0.05$), and Vf (4.64 ± 1.2 to 3.8 ± 1.0 ; $p < 0.05$). 81% of the study sample reached HbA1c within normal ranges ($< 5.7\%$) after 12 weeks. No significant changes were seen in neither AST/ALT nor total body water levels.

Conclusion: The combined therapy with Tk and Mm significantly improved HbA1c and reduced both Vf and BMI in prediabetic patients. These findings highlight the potential to treat prediabetic state effectively while ensuring hepatic safety without edema. Further study is needed using a larger sample size but these results suggest significant comparisons useful for primary treatment.

Effects of 12 weeks of *trichosanthis kirilowii* and manitolatodimolybdate in the treatment of Hispanic prediabetic patients: ePoster # 379 | Session: PS 014 Nutrition and mechanisms in diabetes: observational studies

Effects Of 12 Weeks Of Trichosanthes Kirilowii & Manitolatodimolybdate In The Treatment Of Hispanic Prediabetic Patients



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BACKGROUND AND AIM

Diabetes evolves through prediabetes, defined as having an impaired fasting plasma glucose (FPG) and HbA_{1c} 5.7-6.4%. People with prediabetes and increased visceral fat (Vf) have higher risk of developing diabetes and cardiovascular disease as compared to normoglycemic individuals. Health disparities in diabetes and its complications and comorbidities exist globally. The prevalence of prediabetes in Hispanic population has increased appreciably. While a range of drugs are used to ameliorate the effects of type 2 diabetes and its complications, they tend to slow rather than stop the progression of the disease. Many herbs have been used traditionally by different cultures in the management of type 2 diabetes; however, in general, there is little scientific evidence to support their efficacy. The aim of this study was to examine the effects of 12 weeks of treatment with trichosanthes kirilowii (Tk) and manitolatodimolybdate (Mm) as a novel combination insulin sensitizer on HbA_{1c}, FPG, and Vf in adult Hispanic obese prediabetic patients.



METHODS

This prospective study enrolled subjects aged 18 or older, with HbA_{1c} 5.7-6.4%, FPG 100-125 mg/dl, BMI ≥ 25 kg/m², Vf ≥ 2.1 kg, without any medication, and with normal hepatic or renal function. The patients were instructed to take 2.0mg of Tk and 1.6mg of Mm in one tablet, twice a day during 12 weeks. HbA_{1c}, FPG, and AST/ALT were measured initially and at week 12. Bioelectrical impedance analysis (BIA) was used to estimate visceral fat accumulation and total body water. All data was obtained using data from labs and BIA. Registered Dietitians (RD) certified in diabetes management provided medial nutrition therapy (MNT) and exercise guidelines based on the American Diabetes Association's clinical practice recommendations.

RESULTS

93 patients participated; 53.7% were female. The mean age was 42.1 (± 9.4). After 12 weeks of treatment, significant reductions were observed in HbA_{1c} from 6.2 ± 0.26 to $5.6 \pm 0.2\%$, FPG (mean 114 ± 8.60 to 102.9 ; $p > 0.05$), BMI (32.3 ± 5.9 to 30.4 ± 5.1 ; $p < 0.05$), and Vf (4.64 ± 1.2 to 3.8 ± 1.0 ; $p < 0.05$). 81% of the study sample reached HbA_{1c} within normal ranges ($< 5.7\%$) after 12 weeks. No significant changes were seen in neither AST/ALT nor total body water levels.



CONCLUSION

The combined therapy with Tk and Mm significantly improved HbA_{1c} and reduced both Vf and BMI in prediabetic patients. These findings highlight the potential to treat prediabetic state effectively while ensuring hepatic safety without edema. Further study is needed using a larger sample size but these results suggest significant comparisons useful for primary treatment.

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