MICRO LABS LIMITED

Diabetes Update

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Dear Doctor,

Greetings from Micro Labs Limited. We are happy to bring you "DIABETES UPDATE" which contains latest and interesting news in the field of Diabetes and Endocrinology.

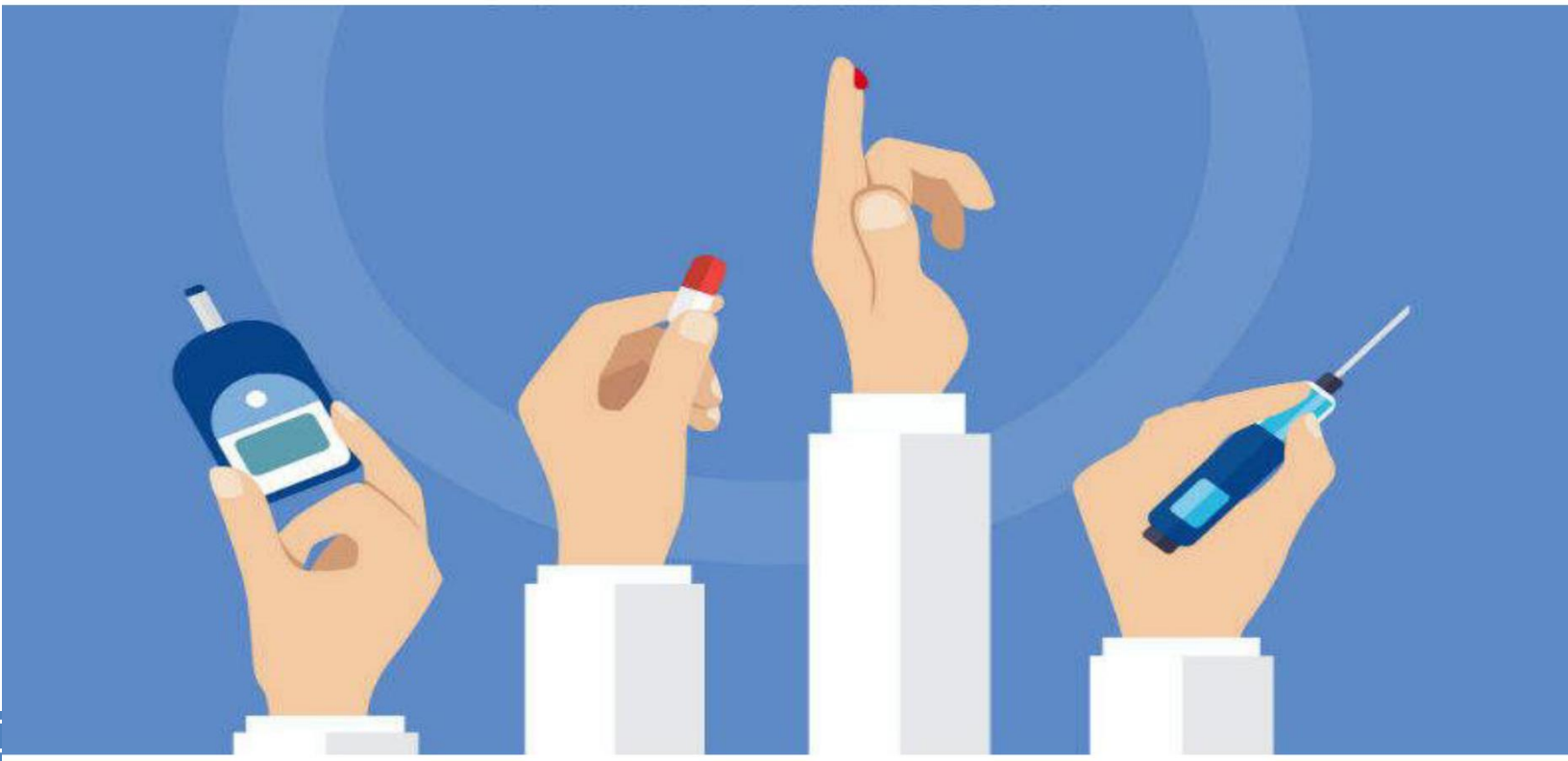
- Diabetes associated residual atherosclerotic cardiovascular risk in statin-treated patients with prior atherosclerotic CVD
- Atherosclerotic Disease Burden After Bariatric Surgery in Patients with Obesity and Type 2 Diabetes
- Effects of α-Cyclodextrin on Cholesterol Control and Hydrolyzed Ginseng Extract on Glycemic Control in People With Prediabetes

Should you require any specific article or medical information, please feel free to contact us at medicalservices@microlabs.in

Looking forward to your valuable feedback

Best Regards,

Medical Team, Micro Labs Limited



Diabetes associated residual atherosclerotic cardiovascular risk in statin-treated patients with prior atherosclerotic CVD

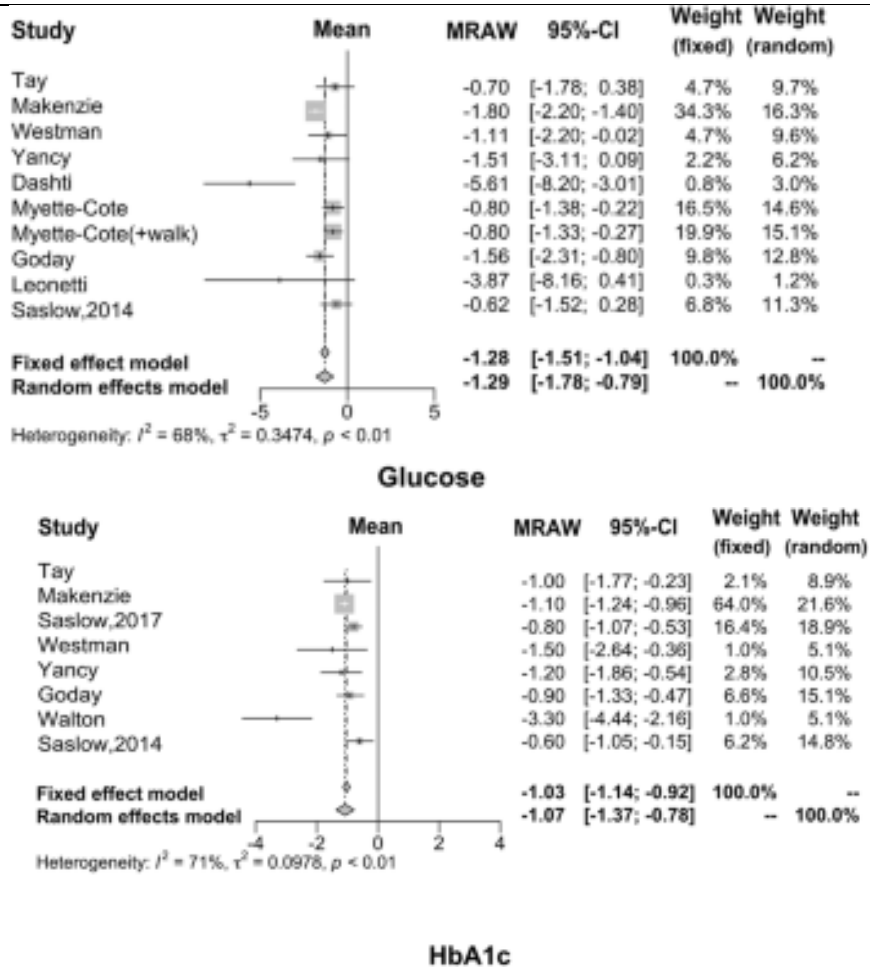
Diabetes mellitus (DM) is the world's leading cause for motility and morbidity, and the disease has become a major public health burden worldwide. It is estimated that the prevalence of diabetes in adults worldwide is over 300 million, and it will increase by 55% by 2035. Obesity or overweight is one of the essential risk factors for diabetes and contributes to a twice-higher risk to develop DM. Thus, dietary therapy aiming at weight loss is typically recommended in clinical practice. At present, the beneficial effect of the ketogenic diet (KD) on weight loss in obese patients is generally recognized. However, a systematic research on the role of KD in the improvement of glycemic and lipid metabolism of patients with diabetes is still found scarce.

This meta-study employed the meta-analysis model of random effects or of fixed effects to analyze the average difference before and after KD and the corresponding 95% CI, thereby evaluating the effect of KD on T2DM.

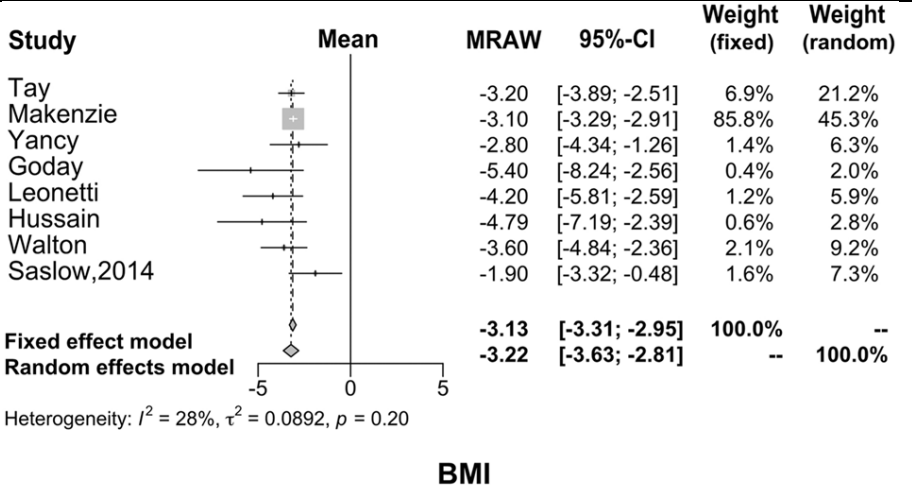
After KD intervention, in terms of glycemic control, the level of fasting blood glucose decreased by 1.29 mmol/L (95% CI: −1.78 to −0.79) on average, and glycated hemoglobin A1c by 1.07 (95% CI: −1.37 to −0.78). As for lipid metabolism, triglyceride was decreased by 0.72 (95% CI: −1.01 to −0.43) on average, total cholesterol by 0.33 (95% CI: −0.66 to −0.01), and low-density lipoprotein by 0.05 (95% CI: −0.25 to −0.15); yet, high-density lipoprotein increased by 0.14 (95% CI: 0.03–0.25). In addition, patients' weight decreased by 8.66 (95%

CI: −11.40 to −5.92), waist circumference by 9.17 (95% CI: −10.67 to −7.66), and BMI by 3.13 (95% CI: −3.31 to −2.95).

Ketogenic diet can not only control fasting blood glucose and reduce glycosylated hemoglobin, but also improve lipid metabolism



Forest plots for blood glucose and HbA1c



Forest plots for BMI. Studies have demonstrated that KD has a positive effect by providing effective control over obesity

Based on a meta-analysis that systematically reviewed 13 relevant studies, we found that ketogenic diet can not only control fasting blood glucose and reduce glycosylated hemoglobin, but also improve lipid metabolism. Additionally, ketogenic diet can reduce BMI and body weight. Therefore, ketogenic diet may be used as part of the integrated management of type 2 diabetes.

Source: Yuan et al. Nutrition and Diabetes 2020 Dec. 10:38. Doi. https://doi.org/10.1038/s41387-020-00142-z

Atherosclerotic Disease Burden After Bariatric Surgery in Patients with Obesity and Type 2 Diabetes

The rising rates of obesity, along with its associated morbidities, represent an important global health threat. Atherosclerotic cardiovascular disease (ASCVD) is among the most common and hazardous obesity-related morbidity, and it is especially prevalent among those who suffer from type 2 diabetes (T2DM). Bariatric surgery (BS) is known to help with effective weight management and reduce the burden of cardiovascular risk factors, especially T2DM.

A nested propensity-matched cohort study was carried out using the Clinical Practice Research Datalink. The cohort included 1186 patients with no past history of ASCVD: 593 of whom underwent BS and 593 propensity-score matched controls, followed up for a mean of 42.7 months. The primary endpoint was the incidence of new ASCVD; defined as new coronary artery disease (CAD), cerebrovascular disease (CeVD), peripheral arterial disease (PAD), or miscellaneous atherosclerotic disease; secondary endpoints included primary endpoint components alone and all-cause mortality. Patients who underwent BS had significantly lower rates of new ASCVD (HR 0.53, CI 0.30-0.95, P = 0.032. There were no significant differences in rates of CAD, CeVD and PAD individually across cohorts, but a lower rate of all-cause mortality was observed in the BS cohort (HR 0.36, CI 0.19-0.71, P = 0.003).

Bariatric surgery was associated with improved ASCVD outcomes and lower mortality in patients with obesity and T2DM

BS was associated with improved ASCVD outcomes and lower mortality in patients with obesity and T2DM. This study provides evidence for increased awareness of potential benefits of BS in the

management of obesity by highlighting a potential role in primary prevention for ASCVD.

Ardissino M et al. J Diabetes 2020. [online ahead of print] doi https://doi.org/10.1111/1753-0407.13151

Effects of α-Cyclodextrin on Cholesterol Control and Hydrolyzed Ginseng Extract on Glycemic Control in People With Prediabetes

Effective strategies for preventing type 2 diabetes are needed. Many people turn to complementary medicines, but there is little well-conducted scientific evidence to support their use. The study was conducted to assess the efficacy of α-cyclodextrin for cholesterol control and that of hydrolyzed ginseng for glycemic control in people with prediabetes and overweight or obesity.

This 6-month double-blind, placebo-controlled, randomized clinical trial, with a 2 × 2 factorial design, was conducted between July 2015 and October 2018 at 2 locations in Sydney, Australia. Eligible participants were aged 18 years or older, had a body mass index (weight in kilograms divided by height in meters squared) of 25 or higher, and had prediabetes within 6 months of study entry according to the American Diabetes Association guidelines. Data analysis was performed from May to August 2019.

Participants were randomized to 1 of 4 groups to take active or placebo versions of each supplement (α-cyclodextrin plus hydrolyzed ginseng, α-cyclodextrin plus placebo, placebo plus hydrolyzed ginseng, or placebo plus placebo) for 6 months. All participants received dietetic advice for weight loss. The primary outcomes were the differences in total cholesterol and fasting plasma glucose between groups after 6 months. The primary analysis used the intention-to-treat principle. Multiple predetermined subsample analyses were conducted.

A total of 401 participants were eligible for the study (248 women [62%]; mean [SD] age, 53.5 [10.2] years; mean [SD] body mass index, 34.6 [6.2]). One hundred one patients were randomized to receive α-cyclodextrin plus hydrolyzed ginseng, 99 were randomized to receive α-cyclodextrin plus placebo, 101 were randomized to receive placebo plus hydrolyzed ginseng, and 100 were randomized to receive placebo plus placebo. For 200 participants taking α-cyclodextrin compared with 201 participants taking placebo, there was no difference in total cholesterol after 6 months (−1.5 mg/dL; 95% CI, −6.6 to 3.5 mg/dL; P = .51). For 202 participants taking hydrolyzed ginseng compared with 199 participants taking placebo, there was no difference in fasting plasma glucose after 6 months (0.0 mg/dL; 95% CI, −1.6 to 1.8 mg/dL; P = .95). Use of α-cyclodextrin was associated with constipation (16 participants vs 4 participants; P = .006) and cough (8 participants vs 1 participant; P = .02). Use of hydrolyzed ginseng was associated with rash and pruritus (13 participants vs 2 participants; P = .006). Only 37 of 401 participants (9.2%) experienced these adverse events. Although they are safe for use, there was no benefit found for either α-cyclodextrin for cholesterol

Participants with prediabetes and overweight or obesity showed no significant effect of αCD on cholesterol or of HGE on glycemic control over 6 months

control or hydrolyzed ginseng for glycemic control in people with prediabetes and overweight or obesity.

	Mean (SD)			
	αCD (n = 200)		Placebo (n = 201)	
Characteristic	Baseline	Month 6	Baseline	Month 6
Weight, kg	96.9 (19.7)	93.6 (19.4)	99.4 (20.4)	95.4 (19.6)
Body mass index[b]	34.2 (6.1)	33.0 (6.0)	35.0 (6.4)	33.7 (6.3)
Weight loss, %	NA	3.4 (4.2)	NA	4.0 (4.3)
Fasting plasma glucose, mg/dL	97 (11)	96 (11)	97 (9)	96 (11)
HbA_{1c}, %	5.6 (0.4)	5.5 (0.4)	5.6 (0.3)	5.5 (0.3)
Cholesterol, mg/dL				
Total	216 (39)	216 (35)	224 (42)	220 (35)
LDL	139 (31)	135 (31)	143 (35)	139 (31)
HDL	54 (12)	54 (12)	54 (12)	54 (12)
Triglycerides	124 (62)	133 (80)	159 (221)	142 (80)

This double-blind, placebo-controlled, randomized clinical trial of participants with prediabetes and overweight or obesity showed no significant effect of αCD on cholesterol or of HGE on glycemic control over 6 months.

Source: Bessell E et al. JAMA Netw Open. 2020 Nov; 3(11): e2023491.