

The prevalence of overweight and obesity is increasing worldwide.¹ Epidemiologic studies have identified high body-mass index (BMI, the weight in kilograms divided by the square of the height in meters) as a risk factor for an expanding set of chronic diseases, including cardiovascular disease,^{2,3} diabetes mellitus, chronic kidney disease,² many cancers,⁴ and an array of musculoskeletal disorders.^{5,6} As the global health community works to develop treatments and prevention policies to address obesity, timely information about levels of high BMI and health effects at the population level is needed.

THE LOWEST-RISK BMI

We used the most recent pooled analysis of prospective observational studies to determine the BMI associated with the lowest overall risk of death.⁹ To address the limitations of previous studies on this topic, which have included residual confounding among smokers and reverse causation due to preexisting chronic diseases,¹⁰ the analysis was restricted to never-smokers without identified chronic diseases who survived 5 years after recruitment. The lowest overall risk of death was observed for a BMI of 20 to 25.

Long-term effects of *Garcinia cambogia*/Glucosaminan on weight loss in people with obesity, PLIN4, FTO and Trp64Arg polymorphisms.

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Author information

Abstract

BACKGROUND:

Overweight and obesity are considered major health problems that contribute to increase mortality and quality of life. Both conditions have a high prevalence across the world reaching epidemic numbers. Our aim was to evaluate the effects of the administration of *Garcinia cambogia* (GC) and Glucosaminan (GNN) on long-term weight loss in people with overweight or obesity.

METHODS:

Prospective, not-randomized controlled intervention trial was conducted. We treated 214 subjects with overweight or obesity with GC and GNN (500 mg twice a day, each) for 6 months evaluating weight, fat mass, visceral fat, basal metabolic rate, and lipid and glucose blood profiles comparing them with basal values. Some patients were carriers of polymorphisms PLIN4 -11482G > A-, fat mass and obesity-associated (FTO) -rs9939609 A/T- and β -adrenergic receptor 3 (ADRB3) - Trp64Arg.

RESULTS:

Treatment produced weight loss, reducing fat mass, visceral fat, lipid and blood glucose profiles while increasing basal metabolic rate. Results were independent of sex, age or suffering from hypertension, diabetes mellitus type 2 or dyslipidemia and were attenuated in carriers of PLIN4, FTO, Trp64Arg polymorphisms.

CONCLUSIONS:

Administration of GC and GNN reduce weight and improve lipid and glucose blood profiles in people with overweight or obesity, although the presence of polymorphisms PLIN4, FTO and ADRB3 might hinder in some degree these effects. ISRCTN78807585, 19 September 2017, retrospective study.

Hypolipidaemic Effects of *Gymnema sylvestri* on High Fat Diet Induced Dyslipidaemia in Wistar Rats.

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Abstract

INTRODUCTION:

Hyperlipidaemia is a well known risk factor for cardiovascular diseases. Lifestyle modification can be the initial step to reduce cholesterol levels. There are various drugs which are used to control dyslipidaemia. Treatment of lipid abnormalities is a lifelong battle. Moreover, the safety and effectiveness of long term lipid lowering treatment are questionable. *Gymnema Sylvestri* (GS) is a well known herb with various medicinal properties.

AIM:

To explore the hypolipidaemic activity of GS leaves extract.

MATERIALS AND METHODS:

Adult healthy female wistar rats, 30 in number, divided into five groups, weighing 150- 200 g were used. Dyslipidaemia was induced in rats by feeding them on high fat diet for four weeks. For the next four weeks GS extract was used as test drug while Atorvastatin was used as standard drug. Blood sample was collected for estimation of lipid profile on day 0, week 4 and week 8. Data was recorded as mean±SEM (Standard error of mean). Paired t-test and one way Analysis of Variance (ANOVA) followed by Dunnett's post hoc test was used for comparison. A p-value <0.05 was considered statistically significant. SPSS Statistics 20 (IBM software) was used for the analysis.

RESULTS:

Feeding rats with high fat diet for four weeks led to obesity and dyslipidaemia in rats. GS at both the doses (100mg/kg and 200mg/kg) significantly improved the lipid profile. Total Cholesterol (TC), Triglycerides (TG), Very Low Density Lipoprotein (VLDL) and Low Density Lipoprotein (LDL) values reduced significantly while that of High Density Lipoprotein (HDL) increased significantly. GS 200 mg/kg was found more effective than GS 100 mg/kg. GS improved the value of lipid profile significantly but the effect was found inferior to Atorvastatin.

Evaluation of antiobesity and cardioprotective effect of *Gymnema sylvestre* extract in murine model.

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Author information

Abstract

OBJECTIVE:

Obesity plays a central role in the insulin resistance syndrome, which is associated with hyperinsulinemia, hypertension, hyperlipidemia, type 2 diabetes mellitus, and an increased risk of atherosclerotic cardiovascular disease. The present study was done to assess the effect of *Gymnema sylvestre* extract (GSE) in the high fat diet (HFD)-induced cellular obesity and cardiac damage in Wistar rats.

MATERIALS AND METHODS:

Adult male Wistar rats (150-200 g body weight) were used in this study. HFD was used to induce obesity. Body mass index, hemodynamic parameters, serum leptin, insulin, glucose, lipids, apolipoprotein levels, myocardial apoptosis, and antioxidant enzymes were assessed. Organ and visceral fat pad weights and histopathological studies were also carried out.

RESULTS:

Oral feeding of HFD (20 g/day) for a period of 28 days resulted in a significant increase in body mass index, organ weights, visceral fat pad weight, cardiac caspase-3, cardiac DNA laddering (indicating apoptotic inter-nucleosomal DNA fragment), and lipid peroxide levels of cardiac tissues of rats. Further, mean arterial blood pressure, heart rate, serum leptin, insulin, LDH, LDL-C, total cholesterol, triglycerides, and apolipoprotein-B levels were enhanced significantly, whereas serum HDL-C, apolipoprotein-A1 levels, and cardiac Na(+) K(+) ATPase, antioxidant enzymes levels were significantly decreased. Furthermore, treatment with standardized ethanolic GSE (200 m/kg/p.o.) for a period of 28 days resulted in significant reversal of above mentioned changes in the obese Wistar rats.

CONCLUSION:

The present study has demonstrated the significant antiobesity potential of GSE in murine model of obesity.

Weight Management

Green Tea Catechins and Sport Performance.

Authors

[Jówko E.](#)

Editors

In: [Lamprecht M.](#), editor.

Source

Antioxidants in Sport Nutrition. Boca Raton (FL): CRC Press/Taylor & Francis; 2015. Chapter 8.

Excerpt

Green tea is brewed from the unfermented dried leaves of the plant *Camellia sinensis*. The predominant constituents of green tea are polyphenols belonging to the family of catechins, mainly (–)-epigallocatechin gallate (EGCG), with lesser amounts of catechin (C), epicatechin (EC), epigallocatechin (EGC) and epicatechin gallate (ECG). In addition, caffeine, theanine, theaflavins and phenolic acids such as gallic acid are present in smaller quantities (Cooper et al., 2005). A typical brewed green tea beverage (250 mL) contains 50–100 mg of catechins and 30–40 mg of caffeine. However, the concentration of bioactive compounds of green tea can vary widely according to preparation methods, that is, brewing time or water temperature (Rains et al., 2011). Therefore, standardised green tea extract (GTE) has been developed for research to provide uniform levels of green tea catechins (GTCs). In recent years, many health benefits of consuming green tea have been reported, including the prevention of diseases associated with free radicals and reactive oxygen species, such as cancer, or cardiovascular and neurodegenerative diseases. In addition to the antioxidant properties of the catechins, their anti-diabetic, anti-bacterial, anti-inflammatory **and anti-obesity activities** also have been reported (Zaveri, 2006). The health benefits of green tea are mainly attributed to its anti-oxidant properties, including the ability of catechins to scavenge reactive oxygen species or chelate with metal ions (Kashima, 1999). In addition to antioxidant effects, GTCs have been purported to influence several molecular targets in signal transduction pathways associated with cell death and survival (Murase et al., 2002). However, it is not known so far whether these effects on molecular endpoints in signal transduction pathways are downstream events of the modulation of pro-oxidant/antioxidant balance in cells or if they result from direct action of the catechins on molecular targets, independent of antioxidant properties (Zaveri, 2006). This chapter highlights the recent research on the efficacy and mechanisms of action of GTCs on body weight, fat metabolism and oxidative stress parameters, with particular interest in their application in healthy, physically active and trained individuals.

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A systematic review of anti-obesity medicinal plants - an update.

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Abstract

Obesity is the most prevalent health problem affecting all age groups, and leads to many complications in the form of chronic heart disease, diabetes mellitus Type 2 and stroke. A systematic review about safety and efficacy of herbal medicines in the management of obesity in human was carried out by searching bibliographic data bases such as, PubMed, Scopus, Google Scholar, Web of Science, and IranMedex, for studies reported between 30th December 2008 to 23rd April 2012 on human or animals, investigating the beneficial and harmful effects of herbal medicine to treat obesity. Actually we limited our search to such a narrow window of time in order to update our article published before December of 2008. In this update, the search terms were "obesity" and ("herbal medicine" or "plant", "plant medicinal" or "medicine traditional") without narrowing or limiting search items. Publications with available abstracts were reviewed only. Total publications found in the initial search were 651. Total number of publications for review study was 33 by excluding publications related to animals study. Studies with *Nigella Sativa*, *Camellia Sinensis*, *Crocus Sativus L*, Seaweed *laminaria Digitata*, Xantigen, virgin olive oil, Catechin enriched green tea, Monoselect *Camellia*, Oolong tea, Yacon syrup, *Irvingia Gabonensi*, Weighlevel, RCM-104 compound of *Camellia Sinensis*, Pistachio, Psyllium fibre, black Chinese tea, sea buckthorn and bilberries show significant decreases in body weight. Only, alginate-based brown seaweed and *Laminaria Digitata* caused an abdominal bloating and upper respiratory tract infection as the side effect in the trial group. No other significant adverse effects were reported in all 33 trials included in this article. In conclusion, *Nigella Sativa*, *Camellia Synensis*, Green Tea, and Black Chinese Tea seem to have satisfactory anti-obesity effects. The effect size of these medicinal plants is a critical point that should be considered for interpretation. Although there was no report for side effect in these trials, we believe that safety of these plants still remains to be elucidated by further long-term studies.