

Case report

Weight reduction in response to unauthorized treatment in a poorly controlled obese woman

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ABSTRACT

This case study highlights the importance of using alternative or herbal medication with no authority or medical prescription. Obesity is a disease that affect human physiological and psychological health and leads to serious complications such as cardiovascular problems. An overweight 41-aged female with a body mass index of 53.9 Kg/m² with no medical history has self-prescribed a herbal tea of fountain grass aerial parts following herbalist advice. Her obesity is poorly controlled and negatively affect her social, emotional, and overall psychological status. Insulin resistance, lipid profile, and glycosylate hemoglobin were on the highest edges. The patient tried many diet regimes with no avail. After regular intake of the herbal tea for six months in conjugation with a low-carb diet; there was an enhancement in her obesity profile conjugated with significant improvements in her body scores and biochemical profile. Undesirable effects were experienced include loss of appetite, constipation, and mood change. The herbal fountain grass tea has a significant contribution to decrease the patient weight and improve her biochemical readings. Alternative therapy and traditional recipes have to be monitored and investigated thoroughly for clinical evidence. The safety of *P. setaceum* needs more investigation.

Keywords: Obesity; medicinal plants; slimming; herbal tea; *P. setaceum*

INTRODUCTION

Obesity is a worldwide problem with an increasing prevalence. It is estimated by the WHO that the total diabetic cases will reach 266 million by 2030 (1). Obesity directly contributed to several incurable diseases, including Diabetes Mellitus (DM). Different factors are involved in obesity pathophysiology; intrinsic factors such as genetics and metabolism, and extrinsic include both the environmental and behavioral variables (2).

Despite the lack of medical evidence and scientific knowledge, People have a strong belief in herbal medication. Their use is not limited to minor health conditions but, it is used for treating some major concerns a well. These include hyperglycemia, dyslipidemia, and cancer (3). Although community pharmacies stocked conventional medicines for aiding weight loss, people still prefer using herbal remedies despite the lack of clinical evidence (4).

Case report

Patient information

A 41-aged female, 154 cm in height, body mass index of 53.9 Kg/m², with no medical history except non-frequent knee joints pain. Her overweight starts to negatively affect her social activities and her psycho-health. Obesity runs in her family. After recurrent failure in decreasing weight by approved methods, the

patient resorted to the non-official alternative medication. She self-prescribed the herbal *Pennisetum setaceum*, following advice from the local herbalist and folkloric recipe. She prepared the herbal tea at home, then took 350 ml of the filtrate every evening. Our team asked the patient permission to follow up on her in-body scores and biochemical data for research purposes. The patient was on a low-calorie diet with low carbohydrate and balanced food but not in a good commitment.

P. setaceum is a grass that belongs to Poaceae family. Globally, it is recorded as a native plant to Jordan where, at the national level mainly it is used as an ornamental plant and sometimes used for its medicinal characteristics by local communities.⁵

Biochemical data measurement

The patient was under our follow up every other week while she was on herbal medication. Significant weight reduction, improvement in her total body scores, and inside body measurements were recorded. Figure1 illustrates major In-body analysis before, within, and after the 6-months treatment time. A significant improvement in the sugar profile, the glycosylated haemoglobin and insulin resistance values, was measured. The HbA1c dropped from 5.9 to 4.5% and the insulin resistance (HOMA-ver2 IR) dropped to fall within its normal values (2.15 to 1.57). Also, the lipid profile improved; cholesterol, triglycerides, HDL, and

LDL- cholesterol values fell within their normal range after 6 weeks of treatment and measured to be 4.64, 1.44, 1.27, and 2.69 mmol/L respectively. The basal metabolic rate responses well to the medication and dropped from 1654 to 1400 Kcal. The overall psychological and social health is improved. Her complaints from joint pain were relieved. Undesirable effects were reported by the patient, during the follow-up sessions, including poor appetite, flatulence, constipation, GIT distress, and mood changes. These symptoms start on the third week of treatment. Despite the undesirable effects, she refused to discontinue the intake.

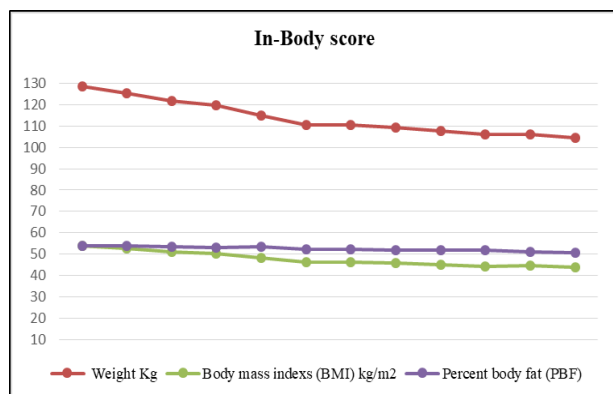


Fig.1: In-Body Score measurements on the first dietician visit and during the 6-months of treatment

Authentication of the plant material

Dried leaves of *P. setaceum* were collected from areas in Al-Karak, south Jordan, in October 2020. The plant is known as *Halfa-Bar* by locals in Al-Karak. Identification and authentication of the plant was done by experts at the Royal Society for the Conservation of Nature (RSCN), Amman, Jordan. Voucher sample was deposited in the RSCN herbarium. Authentication certificate is enclosed. The study follows the rules of the Declaration of Helsinki and is approved by the ethical committee-human experimentation committee in our academic institution. The patient provided a written consent letter.

DISCUSSION

Obesity is a health threat that affects the population, after changes in lifestyle and introducing chemically modified food. Obesity can negatively affect many systems including, the cardiovascular, endocrine and reproductive systems, especially among women. The negative impact on social behavior and psychological health is not to be ignored. Reported suicidal cases among over-weighted people reflect the severity of the disease complications (6).

Plants have a significant contribution to medicine but, their self-prescription with no clinical evidence is a risk. The clinical and biochemical manifestations of this case study found a good response and improvement in the obesity profile of the patient after taking the herbal medication. This improvement could be linked

to the biological efficacy of the plant. Moreover, this case highlighted the restoration of some desperate overweight women to unofficial and nonregistered medications following the folk advice. The patient showed a significant improvement in the measured biochemical data and the overall health status after commitment to take the herbal tea daily and for 6 months. This encourages her to continue the medication despite the experienced side effects. It could be that the plant intake contributes to ameliorating her in-body obesity degree in general and in all the measured parameters related to her body composition, fat, lean and the total obesity degree analysis. Health hazard assessments are necessary because many plant intake, to seek a quick weight reduction, were linked to toxicities and the reported hazard quotient index was higher than one for almost all plants (7).

CONCLUSION

Obesity is a disease that relates strongly to physical and psychological health problems. Desperate patients might refer to unregistered medication and folk recipes to help decrease their weight. Our study concluded, from the observed and measured data of this clinical case, that *P. setaceum* extract could participate in weight reduction and enhance the obesity profile if conjugated with a healthy lifestyle. Further investigations for the safety of its use as slimming and hypoglycemic agents are essential. Exploring the hypoglycemic mechanism of action of the plant extract is much recommended.

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CONFLICT OF INTEREST

The authors declare no conflict of interest.

Data availability statement

The datasets generated during and/ or analyzed during the current study are available from the corresponding author on reasonable request.

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