

CASE REPORT

Acute Pancreatitis Secondary to Garcinia Cambogia; The Unknown Cost of Herbal Supplements

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ABSTRACT

Herbal supplements are unregulated and poorly understood. Over half of Americans take a dietary supplement with virtually unknown side effects. These unknown effects of herbal supplements are further compounded by the use poly pharmacy. We present the case of a 61 year old female who presented to the emergency department for worsening mid-epigastric pain. A diagnosis of pancreatitis secondary to ingestion of Garcinia Cambogia was made. This represents the first case of Garcinia Cambogia induced acute pancreatitis. Awareness of such side effects is paramount to both physicians and patients. As incidence of herbal supplementation increases in the general public we expect to see an increase in the adverse effects of such drugs.

INTRODUCTION

According to the World Health Organization obesity is a global epidemic, having more than doubled since 1980. In 2014, more than 1.9 billion individuals were overweight, of which over 600 million were obese. Recently, herbal supplements have gained tremendous popularity. Of these, Garcinia cambogia, a fruit found in Asia and Africa has gained recent notoriety as a dietary supplement for weight loss. Little has been published regarding its short or long-term side effects. Herbal supplements are not scientifically tested or regulated by any regulatory body, and should be taken with great caution, if at all. Patients and physicians must be cautious regarding the use of non FDA approved Herbal supplements until more is known about their adverse side effects. Known causes of acute pancreatitis include alcohol abuse, obstruction and medications. Garcinia Cambogia is not among the known causes of acute pancreatitis and should be studied for its involvement.

CASE PRESENTATION

A Sixty-one-year-old obese female presented to the emergency department with complaints of worsening mid-epigastric pain of three-day duration. The patient

denied acute alcohol or illicit drug use prior to admission. Past medical history was positive for diabetes mellitus type 2, hypertension, chronic kidney disease stage II, chronic hepatitis C and a history of intravenous drug abuse. The patient had no prior history of gallstones, and was morbidly obese with a BMI was 49.9. Vital signs at presentation were, temperature 99.9 degrees Fahrenheit, heart rate of 82 beats per minutes, blood pressure 146/88 mmHg and respiratory rate of 18 per minute. On inspection the woman was in acute distress with sharp right upper quadrant pain. Palpation of the abdomen showed guarding and rigidity on light and deep palpation in all four quadrants with localization to the upper right quadrant. The patient's Initial laboratory results were noted for white blood cell count of 11.8, triglycerides of 104, glucose 94, calcium 8.7 and albumin 3.1. Liver function tests revealed an AST of 68 and ALT of 75. Total bilirubin was 0.5 with direct bilirubin of 0.3. Lipase levels were markedly elevated at 13,332. History of current medications included Metformin, Glipizide, Metoprolol and Hydrochlorothiazide for two years without alteration in either dosage or manufacturer. After further questioning the patient disclosed that she recently started taking the weight loss supplement Garcinia Cambogia two weeks prior to admission. Computerized Tomography scan of the abdomen and pelvis demonstrated mild peri-pancreatic fat stranding, consistent with acute pancreatitis. MRCP was performed to rule out gallstones as the causative agent. Results showed unremarkable intrahepatic and extra-hepatic biliary ducts with no filling defects or dilated segments with an unremarkable pancreatic duct ruling out gallstone as an etiology (**Figure 1**). Home medications were rectified and continued and Garcinia Cambogia was stopped. The

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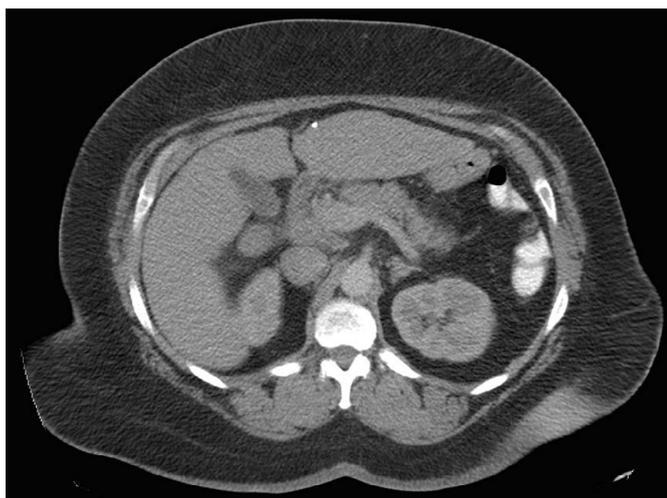


Figure 1. Computerized Tomography scan of the abdomen and pelvis demonstrated mild peri-pancreatic fat stranding, consistent with acute pancreatitis.

Table 1. Normalization of patient lipase levels after stopping Garcinia Cambogia (µ/L).

	Day 0	Day 1	Day 2	Day 3	Day 4
Lipase	13,332	9259	2459	1921	879

patient was placed on intravenous maintenance fluids and made NPO. Labs were repeated q24 to monitor for changes in WBC count and to trend lipase levels (**Table 1**).

On hospital day 4, the patient had significant resolution of symptoms and lipase levels trended down significantly. Once lipase level were within normal limit the patient was discharged home with instruction to cease use of Garcinia cambogia.

DISCUSSION

Garcinia Cambogia has gained popularity as weight loss supplement during recent years. The active ingredient in Garcinia Combogia is Hydroxycitric acid. This acts by competitively inhibiting the enzyme ATP citrate lyase, resulting in alteration of the synthesis of fatty acids, cholesterol and triglycerides. Hydroxycitric acid promotes fat oxidation, normalizes lipid profiles and lowers serum leptin levels in obese patients [1]. While benefits exist, the side effects are undefined. Instances of acute pancreatitis following herbal supplement use particularly Garcinia Cambogia are limited. Two literature reports have cited serious side effects secondary to use of Garcinia Cambogia. One case report of acute hepatitis induced by Garcinia Cambogia [2] and one case of acute necrotizing eosinophilic myocarditis in a patient taking Garcinia Cambogia [3] is found in the literature. To date this represents the first case of acute pancreatitis caused by ingestion of Garcinia Cambogia. Other herbal supplements have been reported causing acute pancreatitis. A recent case demonstrated a link between an herbal supplement designed to enhance libido and acute pancreatitis in a previously healthy 28 year old female [4]. Several studies have shown a possible link between Garcinia Cambogia and oxidative stress.

It was observed by Kim *et al.* that supplementation with Garcinia Cambogia significantly up-regulated hepatic superoxide dismutase and glutathione peroxidase mRNA expression with concomitant increase in lipid peroxidation in the liver. This suggests an increase in antioxidant gene expression by Garcinia Cambogia as a compensatory response to increased oxidative stress [5]. Literature has established reactive oxygen species play an important role in the pathogenesis of acute pancreatitis. Specifically, increase in the rate of free radical generation mediated by lipid peroxidation can lead to oxidative damage secondary to oxidative stress [6]. Our case represents the first link between Garcinia Cambogia usage and pancreatic inflammation. We propose that this relationship could exist due to a possible increase in oxidative stress on the pancreas caused by the ingestion of Garcinia Cambogia. In our patient acute pancreatitis secondary to Garcinia Cambogia was made by exclusion. Given the temporal relationship between usage and disease onset a causative correlation was made between ingestion of the herbal supplement and acute pancreatitis. The full extent of the gastrointestinal side effects of this supplement is not yet elucidated and warrants further investigation.

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Conflict of Interest

The authors declare that there are no conflicts of interest.

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