

A Case Report On Sibutramine Induced Cardiomyopathy

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Citation

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Abstract

Sibutramine is widely used as a weight reduction agent in morbidly obese patient. Unfortunately the medication is associated with adverse cardiovascular complications. This is a case report of a 33 years old man who had no medical illness or any family history of cardiovascular diseases, presented to University Kebangsaan Malaysia Medical Centre with onset shortness of breath and acute heart failure. The patient had a history of taking sibutramine, a traditional slimming pill for 4 months and lost 10 kg of weight during the period. Echocardiogram showed dilated of all cardiac chambers with left ventricle systolic dysfunction. Coronary angiogram was normal. There was no history of alcohol consumption. Other possible causes of dilated cardiomyopathy were negative. Considering negative of all cardiovascular risk factors risks factors we presumed that the patient developed sibutramine induced dilated cardiomyopathy secondary to chronic ingestion of sibutramine. However, despite this, the patient was managed to recover and discharged well with medications.

INTRODUCTION

Obesity has become one of the biggest health care challenges in 21st century. It is reported by the World Health Organization in 2008 that the incidence of obesity has been increased to more than double as compared to 1980 [1]. In 2008 there were 1.5 billion adults 20 years old or older were reported to be overweight. Of these 1.5 billion, over 200 million were men and 300 million were women [2]. It is a well-known fact that obesity is an important cause of decrease in life expectancy. One of the measures traditionally considered to combat obesity is taking slimming pills such as sibutramine. In the 1997 Sibutramine medication was commercially available for the treatment of obesity. The medication is a combination of norepinephrine and serotonin reuptake inhibitors which can suppress appetite and promote weight loss. It is usually used with the combination of exercise and diet. However, there are multiple reported cases that the medication is associated with adverse cardiovascular outcomes [3]. In 2010 a large randomized control trial SCOUT (Sibutramine Cardiovascular and Diabetes outcome Study) was carried out to address this issue. The study concluded that there was a strong association of increase mortality and morbidity among sibutramine users in those with preexisting cardiac diseases. There had been multiple cases reported on sibutramine induced myocardial infarction. Although obesity is an important cause of cardiomyopathy [4], weight reduction pills need to be considered as a cause of non-

ischemic dilated cardiomyopathy in particular in those who are taking diet pills.

In 2007, two patients developed myocardial infarction after consuming sibutramine[3]. Both of the patients had coronary angiogram done which showed normal coronary arteries. There were not many case reports on sibutramine induced non ischemic dilated cardiomyopathy as a result of sibutramine consumption. In Turkey, Sayin et al reported a case of sibutramine induced dilated cardiomyopathy after taking 8 months of sibutramine , 15 mg daily [5]. However, the dilated cardiomyopathy resolved upon follow up in the clinic. Although the incidence of adverse cardiovascular outcome is rare in patient who took sibutramine, it needs to be recognized as an important aetiology especially to those patients with preexisting heart disease.

CASE REPORT

This is a case report of a 33 years old man who did not have any medical illness or any family history of cardiovascular disease before presenting to our center with shortness of breath. He was introduced by his friend to the slimming pill, which locally known as LAMI (combination of sibutramine and spironolactone). LAMI is commonly marketed as traditional health product which can induce weight loss 'naturally', however the label did not mention the dosage of the sibutramine it contains. Our patient took one capsule per day for approximately 4 months. He lost approximately 10

kg in total in 4 months duration.

Three days prior to the presentation to our hospital, he was warded for three days at his local general hospital with palpitation. Electrocardiogram (ECG) and 24 hours halter ECG done during that admission and it was normal. He was then discharged after 3 days of admission with propranolol 40 mg twice a day. He presented to UKMMC with sudden onset of breathless after taking supper at the same day of discharge. On arrival to our emergency department his blood pressure was 106/66 mmHg. He was a febrile but tachycardia with a pulse rate of 121 beats per minute. His oxygen saturation was 100% under room air. He denied any chest pain prior to admission, however the patient did have nonproductive cough for 3 weeks prior to presentation. Patient was tachypnic with the respiratory rate of 28 breaths per min. His condition deteriorated in the emergency department, and he became more breathless, hypotensive and subsequently became asystole. Cardiopulmonary resuscitation had to be carried out for proximately 15 minutes and we managed to revive him. Patient was intubated in the emergency department for airway protection and stabilization. He was given inotropic support due to low blood pressure. His chest was clear on examination. The rest of the examination was unremarkable. His chest radiograph showed cardiomegaly [Fig 1]. There are no acute ischemic changes in his ECG apart for sinus tachycardia. His white cell was $14.3 \times 10^9 /L$, c- reactive protein 0.79 mg/dL. His renal function showed renal injury with creatinine of 152 mmol/L, sodium 138 mmol/L, potassium 5.9mmol/L, urea 5.2mmol/L. His liver function showed alkaline transaminase 94 U/L. His arterial blood gas showed type one respiratory failure . His cardiac enzymes troponin T and creatine phosphokinase MB isoenzyme, results were 0.023ug/L and 3.8 ng/mL. Echocardiogram showed globally dilated of cardiac chambers with poor ejection of 20% in keeping with dilated cardiomyopathy (Fig 2,& 3). Connective tissue screenings were negative, namely anti-nuclear antibody and rheumatoid factors. His Mycoplasma, Chlamydia and HIV serology were all negative. We also screened for Cytomegalovirus and Epstein-Barr viral Ig M, both were also negative. His repeat echocardiogram at intensive care unit (ICU) showed dilatation of all cardiac chambers with global hypokinesia and left ventricle systolic dysfunction with ejection fraction (EF 15% by mmode) [Fig 2& 3]. He continued to improve during his stays in intensive care and we manage to extubate him and wean off his inotropic support. Upon his recovery in the ward he had coronary angiogram done which showed normal coronary. Due to

absence of cardiovascular risk factors and all negative results we concluded that the appetite suppressant (Sibutramine) as the culprit of the underlying causes of his non-ischemic dilated cardiomyopathy

Figure 1

Fig 1: Antero posterior chest radiograph

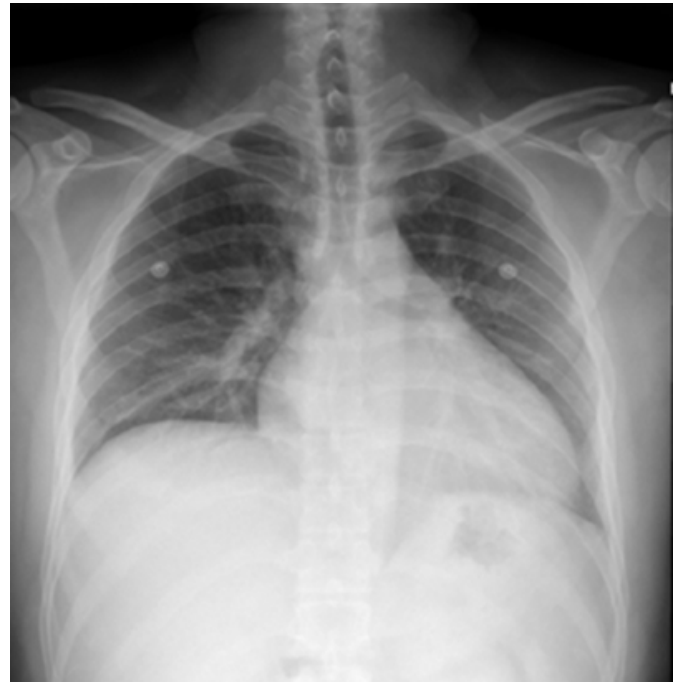


Figure 2

Fig 2: Left Ventricle (LV) function by mmode EF 15.3%

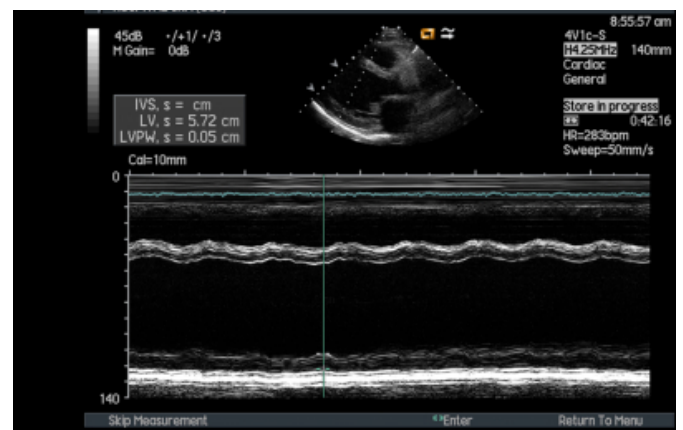
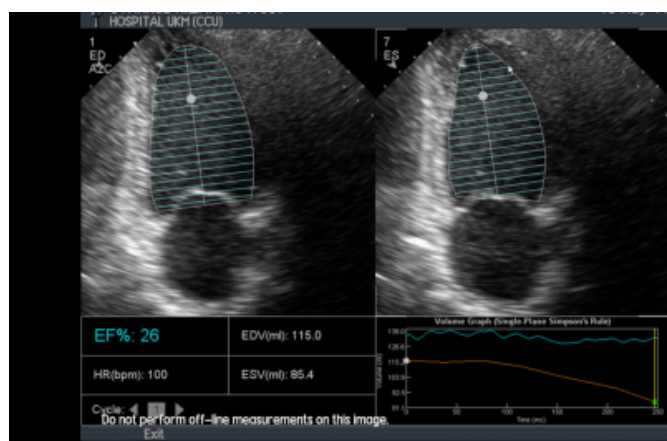


Figure 3

Cardiac Reports		BASIC MEASUREMENTS				8:49 am		
BSA	m ²	HL	cm	WL	kg	Age	33years	BP
M-mode		Diastole	Systole	M-mode		ASE	ASEcorr	
IVS	0.97	cm		LV Mass	298.6	239.5	g	
LV	6.15	cm	5.72	LA/Ao	1.09			
LVPW	0.92	cm		LV Vol	Diastole	Systole		
Ao Diam	3.25	cm	3.54		190.4	161.3	ml	
LA Diam				LV SV	29.1		ml	
LV % FS	7.0	%		LV EF	15.3		%	
IVS/LVPW	1.05			LV CO	8.79		l/min	
				HR	302		bpm	
2D Volumes		Diastole	Systole	LV, A2C	MOD	A/L		
LV Vol, MOD	115.0	85.4	ml	LV SV	29.6		ml	
LV Area	32.80	27.37	cm ²	LV EF	25.7		%	
LV Major	7.82	7.60	cm	LV CO	2.96		l/min	
				HR	100		bpm	

Figure 4

Fig 3: Left Ventricle (LV) function by Simpson method EF 26%



DISCUSSION

Obesity itself is an important cause of poor cardiovascular outcome. It is associated with reduction in life expectancy [6]. Olshansky and colleagues observed that today’s young population will have shorter life span as compared to their parents if no urgent intervention is carried out to address the rising incidence of obesity [7]. With the rise of obesity incidence among the population, more and more people are taking diet pills to lose weight as part of quick solution. Serotonin is being described by some being the ‘hormone of happiness’, even though itself is not a hormone. It stimulates appetite, which results in increase food consumption. Sibutramine, on the other hand, is a neurotransmitter reuptake inhibitor that reduces the reuptake of serotonin and norepineprine, this results in satiety. Besides, promoting satiety, it also causes an increase in energy expenditure by enhancing sympathetic drive which may cause unwanted side effects such as increase in blood pressure and increase in heart rates (sympathomimetic side

effects) [8]. Sibutramine is one of the popular ‘health products’ that being marketed in our part of the world. In 2010, it was published in a large control trial SCOUT (Effect of Sibutramine on Cardiovascular Outcomes in Overweight and Obese Subjects) which shows there is an increase in cardiovascular risks in patient with preexisting cardiovascular disease [9]. The medication was subsequently banned in larger part of the world, including Malaysia. However, the medication is still widely available in black market. The first death associated sibutramine reported in Italy in March 2002, which leads to the suspension of the medication[10]. It is generally not recommended for patients with hypertension. The studied population includes those with experience of one episode of cardiovascular events and or have diagnosed Type 2 diabetes and another cardiovascular risk factors.

Independent review by the European Committee for Proprietary Medicinal Products concluded that the risk-benefit profile of the drug remained positive and recommended the clinician to continue to use the medication [11]. Other studies have shown that sibutramine is association with increase in HDL cholesterol level [12] and weight loss result in regression of left ventricular mass independent of blood pressure lowering effects. Perhaps further study need to carried out in the future to determine the safety of the medication among the non-pre-existing cardiac disease patient, as the potential benefit impact on the obese population may be out weight the adverse cardiac complication.

As for our patient, he was obese and did not have any routine health checkups prior to the starting of the medication. He may have underlying cardiomyopathy which may worsen upon taking sibutramine. Furthermore our patient did not have supervision while taking the medication. All these factors may contribute to his unwanted cardiovascular events. Finally, although some studies have shown sibutramine is successful in the management of risk reduction in weight and metabolic control especially among the diabetic population, the medication should not be taken by those with pre existing heart disease as it may result in exacerbating underlying cardiovascular events.

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