

## Can Energy drink cause acute pancreatitis?

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Acute pancreatitis is an inflammation of pancreas, which is caused mostly by gallstones, and alcohol but many cases are idiopathic where no cause can be identified. Energy drinks are frequently used now days especially among youngsters. Among

many of their side effects, it is postulated that they may be responsible for acute pancreatitis. We present a case of energy drink induced acute pancreatitis. (Rawal Med J 201;42:590-591)

**Key Words:** Energy drink, pancreatitis, pancreas.

### INTRODUCTION

Acute pancreatitis is a potentially life threatening condition with mortality ranging from none in mild disease to 50% in cases of severe illness. It is an inflammatory process in pancreas characterized clinically by pain abdomen, vomiting and elevation of pancreatic enzymes like amylase and lipase.<sup>1</sup> Gall stones and alcoholism are the most common causes followed by hypertriglyceridemia, trauma, drugs, genetic polymorphisms, anatomic malformations of pancreas and malignancy.<sup>2,3</sup> Despite this fact, there are a reasonable number of cases whose cause remained unidentified and are labeled as idiopathic pancreatitis.<sup>4</sup> Among the unidentified causes, energy drinks have been postulated to be a possible cause although no convincing data is available.<sup>5</sup>

Use of energy drinks (EDs) owing to commercial advertisement on media is on rise in modern world now days and is commonly used as beverages.<sup>5</sup> EDs like Red Bull, Rock star and sting contain active ingredients including caffeine, guarana, ginseng, ginkgo biloba, taurine, niacin and cyanocobalmine.<sup>6</sup> Two cases in a single patient after consumption of energy drink have been reported.<sup>5</sup> Similarly, pancreatic dysfunction has been reported by US FDA in two cases caused after consumption of energy drinks.<sup>7</sup> We hereby report a case of acute pancreatitis caused by an energy drink available by the name of "Sting" in local market.

### CASE PRESENTATION

A 14 years old student of high school presented in emergency department of Holy Family Hospital,

Rawalpindi with history of pain epigastrium and vomiting for 1 day. Pain was severe, radiating to back and relieved with some extent on sitting forward. Abdominal pain started around after intake of "Sting" in a school party. He had multiple episodes of vomiting which contained food contents. There was no history of hematemesis, melena and diarrhea. He denied any fever. There was no evidence of jaundice or intake of alcohol or illicit drug abuse. His pulse was 110 beats per minute, Blood pressure 140/90, temperature 98.6 F. He had epigastric and right hypochondrial tenderness. Other systemic examination was unremarkable. Initial diagnosis of gastritis was made and was treated with H2 receptor blockers and proton pump inhibitors. As patient's symptoms were not improving, acute pancreatitis, acute cholecystitis and acute hepatitis were considered.

His Hemoglobin was 15.4 g/dL, Total leukocyte count (TLC)  $22.0 \times 10^9/L$  and platelets  $365 \times 10^9/L$ . Serum total bilirubin and ALT were normal but LDH was raised to 710 U/L (Up to 480 U/L), renal function tests and serum electrolytes were normal. Serum amylase was raised to 845 U/L (Up to 95) as was serum lipase which was 702 U/L (Up to 60 IU/L). Fasting lipid profile including serum triglyceride levels was normal. His serum IgG-4 levels were within normal limits. Prothrombin time and activated partial thromboplastin time were deranged by 11 seconds.

Ultrasonography showed swollen and hypo echoic pancreas. Contrast enhanced CT scan revealed swollen pancreas with loss of surface corrugations.

There was mild peri-pancreatic fat stranding along with few sub centimeter sized lymph nodes. Bilateral gerotas, zuckerandi and lateroconal fasciae were thickened. These findings were suggestive of acute pancreatitis with modified CT severity index 6.

Diagnosis of acute idiopathic pancreatitis or possibly secondary to intake of energy drink was made and was managed conservatively. He was given IV fluids, IV imipenam, and IV proton pump inhibitors. As patient's pain was not improving with NSIADs, epidural analgesia was given to relieve pain. Next day, symptoms started improving. He was discharged in a week from hospital with diagnosis of acute pancreatitis possibly due to energy drink consumption.

## DISCUSSION

In clinical practice, the etiology of pancreatitis remains unidentified in some cases and is labeled as idiopathic. In our patient, he was adamant that he consumed only energy drink in a school party, which led to symptoms of pain abdomen, nausea and vomiting.

Energy drinks are associated with some side effects like nausea, vomiting, pain abdomen, diarrhea, headache, insomnia, tachycardia, arrhythmias, psychiatric disorders and stroke.<sup>6,8</sup> Little evidence of pancreatitis associated with use of energy beverages has been documented in literature, as reported by Shmelev et al.<sup>5</sup> Furthermore, few cases have been reported in which pancreatic dysfunction is caused by these drinks.<sup>7</sup>

There is evidence in literature about the protective role against pancreatitis of certain active ingredients of energy drinks like caffeine and ginkgo biloba.<sup>9</sup> Conversely, a study by Ayuob et al on rats demonstrated that pancreatic islet of Langerhans which were given energy drinks showed certain histological changes including necrosis and karyolysis.<sup>10</sup> Similarly, ginkgo which is an active ingredient of EDs is protective against inflammation of pancreas, there are few reports by FDA that it causes pancreatitis.<sup>18</sup> In our patient, we could not find out any other cause or risk factor and we presumed that there might be some association

of pancreatitis with consumption of energy boosting drinks as although little, but evidence is available in literature about their association.

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