

## **Dumping Syndrome: A Practical Approach to Diagnosis and Management .**

Andrew Ukleja, MD, CNSP. Cleveland Clinic Florida, Weston, Florida

### **Learning objectives:**

Upon completion of this session you will be able to learn about diagnostic tests and diet and medical therapy for dumping syndrome.

1. Recognize which patients are at risk for dumping syndrome.
2. Select diagnostic test for early and late dumping
3. Be familiar with dietary measures and drug options for dumping syndrome

Dumping syndrome is a frequent complication of esophageal, gastric or bariatric surgery. Anatomic and physiologic changes introduced by gastric surgery result in clinically significant dumping syndrome in approximately 10% of patients. Dumping is the result of alteration in the motor functions of the stomach including gastric reservoir and transport.

Dumping syndrome can be divided into early and late forms, depending on the occurrence of symptoms in relation to the time elapsed after a meal. The majority of patients have early dumping, while approximately 25% of them have late dumping, and only a minority has symptoms of both. Dumping syndrome is diagnosed based on a constellation of symptoms in a patient who had undergone gastric surgery or by dumping provocation test.

### **Self-Assessment Questions:**

1. Hunger, shakiness and difficulty with concentration are symptoms of
  - a. Early dumping
  - b. Late dumping
  - c. Both of early and late dumping
2. Acarbose has been shown to be effective in
  - a. Early dumping
  - b. Late dumping
  - c. None of above
3. Octreotide should be used early in dumping syndrome
  - a. True
  - b. False

### **Answers to self-assessment questions:**

#### **1.b**

Symptoms of hunger, shakiness, concentrating difficulty, and decreased consciousness are seen in late dumping as a result of late reactive hypoglycemia.

Late dumping occurs 1–3 hours after a meal, and it is characterized by systemic symptoms. It is a consequence of “reactive hypoglycemia” due to an exaggerated release of insulin. After rapid delivery of a meal to the proximal small intestine, higher concentration of carbohydrates are seen in the bowel lumen, followed by rapid absorption of glucose into the blood.

## 2. b

Acarbose, competitive inhibitor of alfa-glycoside hydrolase, has been used in the management of late dumping. Acarbose significantly blunts the postprandial rise of serum glucose and insulin by delaying carbohydrate digestion. Conversion of complex carbohydrates (starch and sucrose) to monosaccharides by acarbose is delayed rather than completely blocked. In a double-blind study of 9 patients after gastric surgery, acarbose given at a dose of 50 mg following a normal carbohydrate rich meal has been shown to reduce symptoms of postprandial hypoglycemia, especially in combination with pectin. A complete disappearance of late dumping symptoms, palpitation and dizziness, has been reported with 1 month of therapy with acarbose (50 mg or 100 mg 3 times per day) in 6 patients with dumping and non-insulin dependent diabetes mellitus. The use of acarbose may be limited by diarrhea and flatulence, but the side effects subside over time.

## 3. b

Octreotide (Sandostatin, Sandoz, East Hanover, NJ) have been effective in patients with dumping refractory to standard therapy in early and late dumping. It exerts a strong inhibitory effect on the release of insulin and several gut-derived hormones. In a short-term use, octreotide has been shown to decrease the symptom index score, pulse rate, and plasma insulin levels when compared with placebo. Octreotide prolongs the rate of gastric emptying by resetting the migrating motor complex to the fasting level. The usual initial dose of octreotide is 25–50 mcg administered subcutaneously, 2–3 times daily, 30 minutes before meals. The dose can be increased to 100 mcg if the smaller dose is ineffective. Vecht et al. reported outcome of a long-term therapy with octreotide (mean follow-up of 37 months) in 20 patients with severe dumping. The initial symptom relief was achieved in all subjects. However, after 3 months of therapy, improvement was seen in 80% of patients. Eleven patients discontinued treatment because of lack of improvement or side effects. The use of octreotide is limited by side effects such as diarrhea and injection aversion. Several studies have established symptomatic benefits of octreotide in patients with dumping syndrome, but clinical use is hampered by the requirement for subcutaneous administration 3 times daily. Long-acting repeatable LAR form of octreotide is available. Quality of life, weight, fecal fat excretion and gallstone formation were evaluated in 34 patients with severe dumping syndrome refractory to other therapeutic measures treated with octreotide subcutaneous or long acting release. Patients with severe dumping did better on subcutaneous than long-acting release despite the inconvenience of frequent injections. Octreotide should be offered to patients with severe refractory dumping when other therapeutic options (diet, pectin, acarbose) have been exhausted.

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