

Case Reports

Marked improvement of severe gastroparesis following high dosage, but very well tolerated, dextroamphetamine sulfate

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Summary

Purpose: To determine if treatment with dextroamphetamine sulfate could provide palliation for severe treatment refractory gastroparesis. **Materials and Methods:** Dextroamphetamine sulfate 15 immediate release tablets were initiated and the dose titrated upwards according to the degree of improvement vs. side effects. **Results:** The large majority of the symptoms of abdominal pain, very severe vomiting, and diarrhea was markedly improved but it took a very high dosage of amphetamine salts (150 mg). This dosage, however, did not cause any side effects. **Conclusions:** The gynecologist, who also is frequently asked to evaluate gastrointestinal (GI) symptomatology, is more cognizant of the increased cellular permeability syndrome, and thus may be called upon to treat certain GI conditions that should be more appropriate for the GI specialist to treat. The more articles that appear in the literature, the better the chance to promulgate the knowledge of these conditions, e.g., gastroparesis, to other specialties.

Key words: Gastroparesis; Increased cellular permeability syndrome; Dextroamphetamine sulfate; Sympathomimetic amines.

Introduction

One of the clinical manifestations of the increased cellular permeability syndrome is pain in various parts of the body including pelvis, bladder, abdomen, back, muscles, ligaments, joints, and head [1-3]. The hypothesized mechanism is that related to an inherited or acquired defect in cellular permeability of a given tissue and/or inheritance of sympathetic nervous system hypofunction, unwanted toxic elements absorb into tissues causing inflammation and subsequent pain [1-3]. These disorders can be markedly improved by stimulating the release of dopamine by sympathetic nerve fibers, which is the main biogenic amine reducing cellular permeability [3].

Other clinical manifestations may involve unwanted chemicals infusing into mitochondria causing muscle dysfunction. When skeletal muscles are involved, the clinical manifestation may be marked fatigue [4-6]. When it involves smooth muscle, various gastrointestinal motility disorders ensue, e.g., achalasia, gastroparesis, and pseudo-intestinal obstruction [7-9]. These conditions all respond to dextroamphetamine sulfate [7-9].

The increased cellular permeability syndrome is the most common cause of pelvic pain, and dextroamphetamine sulfate is the most effective therapy with the least side effects [10-13]. In contrast to surgery, where the pain may quickly

return, and the surgery could compromise ovarian egg reserve, dextroamphetamine sulfate therapy not only does not diminish oocyte reserve, but may even preserve it by inhibiting damage from ovarian inflammation [3, 11, 14].

The two main specialists involved with diagnosing and treating abdominal pain are gastroenterologists and gynecologists. There seems to be a common denominator of increased cellular permeability at the root of pelvic and gastroenterology conditions whether these manifest as pain, diarrhea, constipation or vomiting [15, 16].

The treatment of gastroparesis with dextroamphetamine sulfate does not seem to be known by most gastroenterologists. Thus, it would seem appropriate for the gynecologist who is most familiar with the increased cellular permeability syndrome, to step in and offer sympathomimetic amine therapy to a woman suffering from this condition, especially if the treatments rendered by the gastroenterologist are not proving effective.

Case Report

A woman had a gastric bypass in 1999 at the age of 33. She started to gain weight about three years later despite the bypass, and six years later started gastrointestinal symptoms of excessive vomiting, diarrhea, and abdominal pain. The symptoms became progressively worse. Consultation by multiple gastroenterologists

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and multiple tests reached the conclusion that she had gastroparesis. Interestingly, despite hardly being able to eat without vomiting, she was actually gaining weight. Unfortunately, the gastroenterologists were not able to provide any therapy that relieved her symptoms. She consulted the present authors' practice, being referred by another patient who had relief of her abdominal pain by dextroamphetamine sulfate therapy. She seemed to be resistant to this therapy not responding to the usual dosages (generally 60 mg is the maximum dosage). She requested that the authors increase the 60 mg dosage, because though her response was unimpressive, this was the only treatment providing at least some minor relief. Thus, they gradually increased the dosage. With each increment she gained improvement without any side effects. The final dosage was 150 mg amphetamine salts immediate release tablets. On this dosage her blood pressure was 94/66 mmHg and her heart rate 68 beats/minute. She stated it provided her 98% relief of her symptoms. Because of insurance issues she stopped the medication after two years of 98% relief. Within a couple weeks all of her symptoms returned. She resumed medication and all of her symptoms disappeared again.

Discussion

Though some of the benefits of dextroamphetamine sulfate on gastrointestinal (GI) disorders have been published in GI journals as early as 1990, but also in 2010 and 2011, yet none of the GI specialists she had seen knew of this therapy [7, 8, 17, 18].

A case was reported where a male with gastroparesis who failed to respond to other therapies did respond to dextroamphetamine sulfate, but the dosage had to be markedly reduced to 2.5 mg daily because he was not able to metabolize the drug because of a defect in the micronizing drug oxidizing system [19]. In the present case possibly there was some problem with excessive metabolizing of the drug explaining the extremely high dosage of drug without raising the heart rate. Malabsorption to explain the need for high dosage seems less likely because without the drug she gained rather than lost weight.

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