An orlistat “overdose” in a child

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Dear Editor,

I would like to present the case of a 28-month-old girl who recently presented to the Accident and Emergency Department of our General Hospital following the accidental ingestion of 5,160 mg of orlistat (Alli®). Her mother, who was taking this newly available over-the-counter medication for weight loss, found the child on the living room floor with the open medication bottle and a number of capsules open on the floor. In total 43 tablets were unaccounted for, at a dose of 120 mg per tablet. On presentation to the accident and Emergency Department, 20 min following the incident, the young girl was alert, in no physical distress and completely asymptomatic.

We contacted our national toxicology centre for advice. Unfortunately reported cases of orlistat exposure in children are limited [1]. However, based on product information we were advised to monitor the girl for 6 h with particular focus on GI symptoms. Fatty foods were advised against for 24 h. If symptoms developed supportive measures were recommended. Thankfully this young girl remained asymptomatic for that period. She was subsequently reviewed by a nearby Accident and Emergency Pediatrics service, following discharge from our hospital, and cleared by them with no resultant consequences from her overdose.

Orlistat (marketed as a prescription only medicine as Xenical® by Roche; or over-the-counter as Alli® by Glaxo-SmithKline), also known as tetrahydrolipstatin, is a drug designed to treat obesity. Its primary function is preventing the absorption of fats from the human diet, thereby reducing caloric intake. It is intended for use in conjunction with a physician-supervised reduced-calorie diet. Orlistat is the saturated

derivative of lipstatin, a potent natural inhibitor of pancreatic lipases isolated from the bacterium *Streptomyces toxytricini* [2]. However, due to simplicity and stability, orlistat rather than lipstatin was developed into an anti-obesity medication.

Orlistat works by inhibiting gastrointestinal lipase, an enzyme that breaks down triglycerides in the intestine. Without this enzyme, triglycerides from the diet are prevented from being hydrolyzed into absorbable free fatty acids and are excreted undigested. Only trace amounts of orlistat are absorbed systemically; the primary effect is local lipase inhibition within the GI tract after an oral dose. The primary route of elimination is through the feces. At the standard prescription dose of 120 mg three times daily before meals, orlistat prevents approximately 30% of dietary fat from being absorbed. Higher doses do not produce more potent effects.

The primary side effects of the drug are gastrointestinal-related, and include steatorrhea, fecal incontinence, frequent or urgent bowel movements, and flatulence. To minimize these effects, foods with high fat content should be avoided; the manufacturer advises consumers to follow a low-fat, reduced-calorie diet. Oily stools and flatulence can be controlled by reducing the dietary fat content to somewhere in the region of 15 g per meal.

With Alli® now being available over the counter, fears regarding overdose can be somewhat reassured by this case where a 28-month-old had a large ingestion of the medication without adverse effects.

References

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