

Positive Drug Screen for Benzodiazepine Due to a Chinese Herbal Product

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ABSTRACT: A female athlete tested positive for benzodiazepine on a random drug screen. She denied taking any illicit or prescription drugs. The positive screen was found to be caused by undeclared addition of diazepam to a Chinese herbal product, "Miracle Herb." Some foreign vitamins, health care products, or herbal tea may contain banned or dangerous additives unknown to the consumer. These additives may

include ingredients such as benzodiazepine, mefenamic acid, or corticosteroids. Possible physical harm may result when using products containing these undeclared additives. Team physicians and athletic trainers should educate athletes about the purchase and use of vitamins, herbal teas, and substances that are perceived to be performance-enhancing products, especially those manufactured outside the United States.

At times athletes take vitamins or other ergogenic products that they hope will enhance their athletic performance.⁴ The athlete, as well as health care professionals, may be unaware that certain nonprescription drugs, vitamins, herbal teas, and other health products manufactured outside the United States may contain small amounts of undeclared prescription drugs such as diazepam, mefenamic acid, corticosteroids, or other products that could prove harmful to the uninformed user.⁴ If these products are ingested by an athlete, a positive drug test could result. The purpose of this study is to inform athletes, athletic trainers, and team physicians of various products containing undeclared, banned, and potentially dangerous additives.⁵

CASE REPORT

A 20-year-old female athlete tested positive for benzodiazepine on a random drug screen. The student denied the use of any prescription medication or any illicit drug use. It was initially speculated that some compound was causing a "false-positive" test for benzodiazepine. Benzodiazepines are manufactured products; there are no known naturally occurring benzodiazepines that would result in a false-positive test.

After further confirmation of the presence of diazepam in the urine specimen, the athlete was questioned about any other drugs she might have obtained from physicians while visiting at home. She revealed that she was taking a Chinese herbal product obtained from her hometown chiropractor. The athlete supplied several samples of the product to be analyzed. The pills looked like black balls. Roche Biomedical Laboratories analyzed the herbal product "Miracle Herb" by gas chromatography/mass spectrometry. The analysis indicated that the samples provided contained small amounts of the prescription drug diazepam. The Ohio chiropractor had obtained the "Miracle Herb" from a supplier located in Hutchinson, Kansas.

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DISCUSSION

When informed of the presence of diazepam in this vitamin, the chiropractor said that he was unaware of its addition.

In 1995, Gertner et al⁵ reported on five patients who developed medical complications while taking "Chinese black balls." The only ingredients listed on the bottle were the herbs, but all black balls contained diazepam and mefenamic acid in various concentrations. Patient complications from ingesting these black balls included nonsteroidal anti-inflammatory drug-induced gastritis, massive gastrointestinal bleeding, hypotension, and benzodiazepine toxicity. Fedoruk and Lee³ reported a case of a pre-employment urine drug screen that proved positive for diazepam. The diazepam was from a vitamin manufactured in El Salvador.

Abt et al¹ reported a case of acute renal failure due to the mefenamic acid (not quantitated) and diazepam (0.43 mg per pill). DuPont and Bogema² detected the presence of diazepam in a nonprescription health product obtained from a California address. The pill was "NAN-LIEN CHUIFUNG TOUKU-WAN." The Food and Drug Administration traced the manufacture of these pills to Hong Kong.⁴ "Analysis of the tablets has demonstrated the presence of a corticosteroid (probably prednisone) and a benzodiazepine tranquilizer like diazepam (Valium) . . . some of the tested samples have shown lead in the product, which can result in toxicity."⁴ Benzodiazepines and corticosteroids are banned by the United States Olympic Committee.⁴

CONCLUSION

Some athletes look for ways to enhance their performance and may seek advice and ergogenic aids from friends, family, and health care providers. Many athletes are unaware that some foreign manufactured products may contain various undeclared substances, including benzodiazepine and mefenamic acid. Even the supplier may be unaware of the presence of illicit drugs in a seemingly harmless health product. Such was the case in this situation.

Team physicians, athletic trainers, and athletes need to be aware that certain foreign-made health products may contain benzodiazepine, mefenamic acid, or corticosteroids that would

result in possible physical harm to the patient, including drug dependence, benzodiazepine toxicity, drug interactions, acute renal failure, gastrointestinal bleeding, and/or nonsteroidal anti-inflammatory drug-induced gastritis. The regular use of benzodiazepines, even in therapeutic doses, may result in dependence, although the incidence is low.⁶

We need to inform our athletes and other health care providers that certain foreign products should be avoided because they may contain small amounts of prescription drugs not listed on the label. Vitamins and herbal products are frequently not thought of as "drugs," so they are not included when the athlete lists recent medications used. When obtaining a drug history, specific questions should be asked about vitamins, herbal products, and other over-the-counter preparations that the athlete may be taking.

By presenting this case, it is hoped that awareness will be increased that the use of these products could result in serious

medical complications as well as a positive drug test that may affect an athlete's future participation in organized sports.

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