



NATIONAL TRANSPORTATION SAFETY BOARD

Office of Research and Engineering
Washington, DC

Medical Factual Report

February 26, 2021

Mary Pat McKay, MD, MPH
Chief Medical Officer

A. ACCIDENT: ERA20LA183; Rogersville, TN

Date: May 15, 2020, 1410 EDT

Injuries: 1 Fatal

B. GROUP IDENTIFICATION

No group was formed for the medical evaluation in this accident.

C. DETAILS OF INVESTIGATION

1. Purpose

This investigation was performed to evaluate the pilot for medical conditions, the use of medications/illicit drugs, and the presence of toxins.

2. Methods

The FAA medical case review, autopsy report, toxicology findings, and the investigator's reports were reviewed. Relevant regulation and medical literature were reviewed as appropriate.

FAA Medical Case Review

According to the FAA medical case review, the 83 year old male pilot reported 5,000 total flight hours as of his last medical exam, dated 5/26/2004. At that time, he was 71 inches tall and weighed 214 pounds. He reported no chronic medical problems and no current use of medications to the FAA. No significant abnormalities were identified on the physical exam and he was issued a third class medical certificate limited by a requirement he have available glasses for near vision.

Autopsy

According to the autopsy performed by the William Jenkins Forensic

Center, the cause of death was multiple blunt force injuries and the manner of death was accident. In addition, moderate atherosclerotic stenosis (50%) of left anterior descending coronary artery and right coronary artery was identified. The pathologist reported the presence of hypertensive cardiovascular disease based on the appearance of the kidneys.

Toxicology

Toxicology testing performed by the FAA's Forensic Sciences Laboratory identified diphenhydramine in femoral blood (65 ng/ml) and urine; cetirizine in femoral blood (24 ng/ml) and urine as well as tamsulosin and naproxen in subclavian blood and urine.

Medication Descriptions

Diphenhydramine is a sedating antihistamine used to treat allergy symptoms and as a sleep aid. It is available over the counter under the names Benadryl and Unisom. Diphenhydramine carries the following FDA warning: may impair mental and/or physical ability required for the performance of potentially hazardous tasks (e.g., driving, operating heavy machinery).¹ Compared to other antihistamines, diphenhydramine causes marked sedation; it is also classed as a CNS depressant and this is the rationale for its use as a sleep aid. Altered mood and impaired cognitive and psychomotor performance may also be observed. In fact, in a driving simulator study, a single dose of diphenhydramine impaired driving ability more than a blood alcohol concentration of 0.100%.² The therapeutic range of diphenhydramine (range in which it is expected to cause effects) is 25 to 112 ng/ml.³

Cetirizine is another sedating antihistamine, commonly marketed with the name Zyrtec. It carries a warning about drowsiness and is considered to routinely have effects between 190 and 1450 ng/ml.⁴

Tamsulosin is a prescription medication used to treat symptoms of an enlarged prostate and is not generally considered impairing. Naproxen is an anti-inflammatory analgesic available over the counter under various names including Aleve. It is not generally considered impairing.

¹ Federal Aviation Administration. Civil Aerospace Medical Institute. Toxicology Drug Information: Diphenhydramine. Available from: <http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=50>. Accessed 03/18/2018.

² Weiler JM, B.J., Woodworth GG, Grant AR, Layton TA, Brown TL, McKenzie DR, Baker TW, Watson GS., Effects of fexofenadine, diphenhydramine, and alcohol on driving performance. A randomized, placebo-controlled trial in the Iowa Driving Simulator. Ann Intern Med 2000. 132(5): p. 354-63.

³ Federal Aviation Administration. Civil Aerospace Medical Institute. Toxicology Drug Information: Diphenhydramine. Available from: <http://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=50>. Accessed 03/13/2018.

⁴ Federal Aviation Administration. Civil Aerospace Medical Institute. Toxicology Drug Information: Cetirizine. <https://jag.cami.jccbi.gov/toxicology/DrugDetail.asp?did=131> Accessed 2/26/2021.

D. SUMMARY OF MEDICAL FINDINGS

The 83 year old male pilot had not reported any medical conditions or use of medications to the FAA.

According to the autopsy performed by the William Jenkins Forensic Center, the cause of death was multiple blunt force injuries and the manner of death was accident. In addition, moderate atherosclerotic stenosis (50%) of left anterior descending coronary artery and right coronary artery was identified. The pathologist reported the presence of hypertensive cardiovascular disease based on the appearance of the kidneys.

Toxicology testing performed by the FAA's Forensic Sciences Laboratory identified diphenhydramine in femoral blood (65 ng/ml) and urine; cetirizine in femoral blood (24 ng/ml) and urine as well as tamulosin and naproxen in subclavian blood and urine.