Male hypogonadism does not simply refer to the potential for testosterone deficiency that occurs with normal aging. Primary hypogonadism results from testicular disease and secondary hypogonadism results from disease of the hypothalamic-pituitary axis or lack of response to testosterone. This article presents a case report of a third-class pilot diagnosed with secondary hypogonadism that was being treated with clomiphene citrate.

History

A 35-yr-old male third-class pilot with nearly 300 hours' flying time was diagnosed with idiopathic secondary hypogonadism and was started on clomiphene citrate (Clomid), one 50 mg tablet three times per week. His medical history is significant only for right inguinal hernia repair and shoulder surgery. The airman was stable and without symptoms on this dose of clomiphene citrate (Clomid) when he applies for medical certification. He presents to his aviation medical examiner (AME) with a report from his treating physician.

Aeromedical Issues

The symptoms of untreated male hypogonadism with aeromedical implications include fatigue, sleep disturbances, anxiety, and depression (1). The general medical standards under Title 14 of the Code of Federal Regulations (CFR), parts 67.113, 67.213, and 67.313 indicate that the individual must have no organic, functional, or structural disease, defect, or limitation that would make them unable to safely exercise the privileges of their respective airman certificate. This regulation also states that any medication used to treat such a condition must not make the individual unable to safely perform the duties required of their certificate (2). The AME must make two determinations of the airman with male hypogonadism: Are the symptoms (whether treated or untreated) severe enough to preclude issuing a certificate? and are there any medications the airman is using to treat hypogonadism that are potentially unsafe for flying duties?

Testosterone therapy is a well-established, safe, and efficacious treatment for male hypogonadism. Potential side effects include skin irritation and a small risk of exacerbating prostate cancer (3). These side effects have no significant aeromedical implications, and an airman with hypogonadism that is being successfully treated with testosterone should be issued his certificate if there are no other disqualifying conditions.

Clomiphene citrate is a selective estrogen receptor modulator that has commonly been used to treat female infertility. It can also be used to treat male infertility in specific clinical scenarios (4). The use of Clomid in the treatment of male hypogonadism is an off-label use, but it has been shown to be both safe and effective for this purpose (5). According to the Guide for Aviation Medical Examiners, a medication is disqualifying if it has not been approved by the Food and Drug Administration to treat a particular medical condition (6). Because this airman is continuously using Clomid for the off-label treatment of hypogonadism, his application must be deferred to the FAA for disposition.

Outcome

The AME deferred the application to the Aeromedical Certification Division (AMCD). Initially, the AMCD granted a Special Issuance with the restriction of no flying 72 hours after each dose. This restriction was based on the normal dosing for Clomid when used to treat female infertility and included a 30-day limit.

The airman appealed this restriction because he would be unable to adhere to treatment three times per week and still be able to fly. Side effects of Clomid include hot flushes and mild abdominal discomfort occurring in less than 10% of patients. Visual disturbances have also been reported with Clomid use, and this does have aeromedical implications. There are conflicting cases in the literature regarding these visual disturbances, which can include persistent after-images (palinopsia), peripheral field distortion, and photophobia. An older study documented persistent changes in women undergoing infertility treatment.

Continued on page 13
while a newer study found only very minimal changes that were insignificant and entirely reversible (7, 8). Because this airman had been stable on his current dose of Clomid with no visual changes for 12 months, he was granted a one-year time-limited certificate with no restrictions for the chronic use of Clomid, provided the dose not exceed 100 mg per day and he remains free of side effects.

Continued certification was contingent upon reporting any changes in the treatment regimen, and the AME would be able to reissue the time-limited certificate with a report from the treating physician.

References

About the Author
Justin B. Nast, MD, MPH, Col, USAF, MC, was a Resident in Aerospace Medicine when he wrote this case report at the Civil Aerospace Medical Institute. He is now the Chief, Aerospace Medicine Division, Office of the Command Surgeon, HQ Air Force Space Command.